SEVERAL

ESSAYS

Political Arithmetick:

The Titles of which follow in the Enſuing Pages.

BY

Sir *WILLIAM PETTY*,
Late Fellow of the *Royal Society*.

LONDON:

Printed for *Robert Clavel* at the *Peacock*, and *Henry Mortlock* at the *Phœnix* in St. *Paul's* Church-Yard. 1699.

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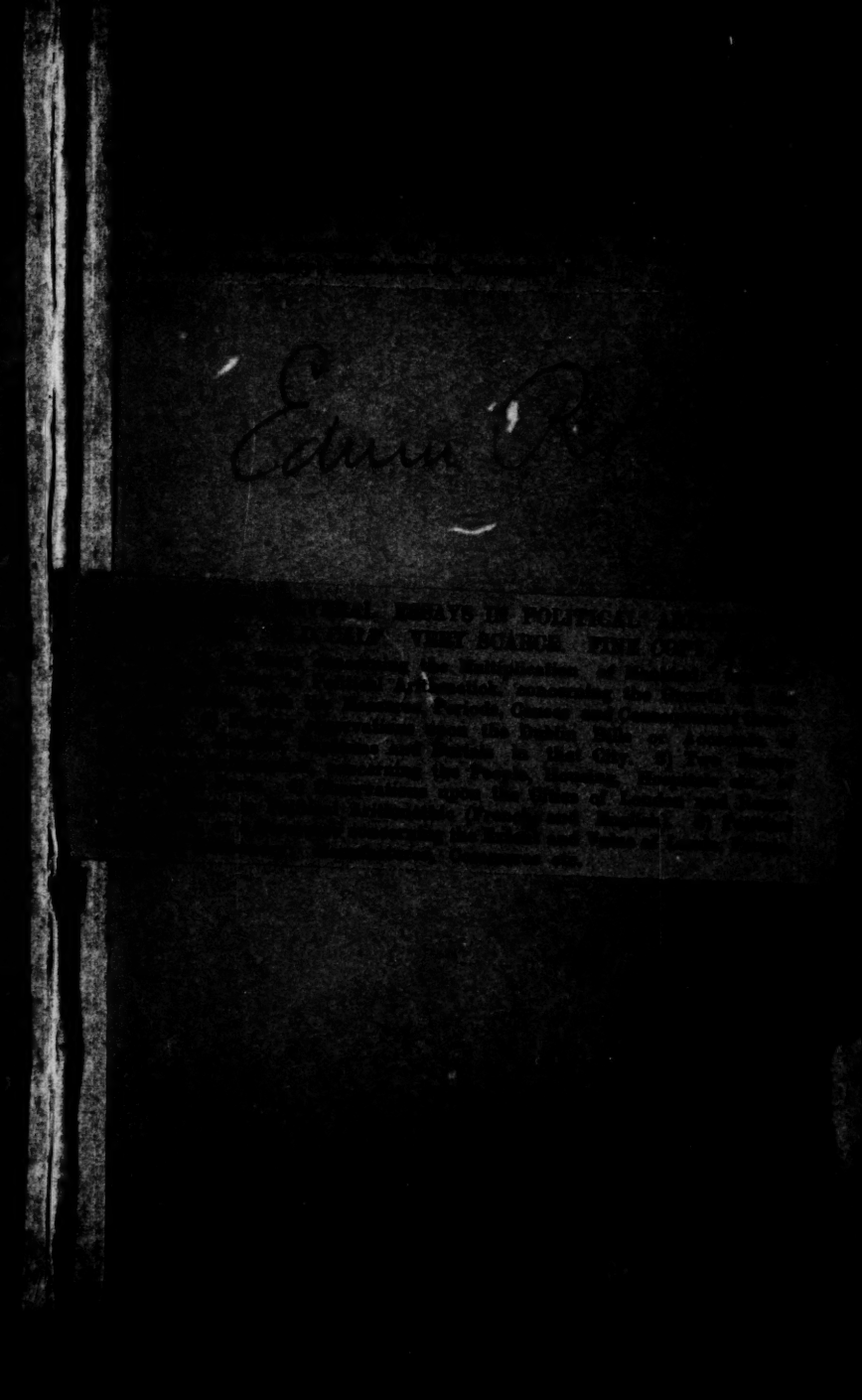

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AN

ESSAY

Concerning the

Multiplication of Mankind:

Together with another

ESSAY

IN

Political Arithmetick,

Concerning the Growth of the

City of *LONDON:*

WITH THE

Measures, Periods, Causes, and Consequences thereof. 1682.

The Third Edition Revised and Enlarged.

By Sir WILLIAM PETTY, late Fellow of the *Royal-Society.*

LONDON, Printed for *Robert Clavel* at the *Peacock*, and *Henry Mortlock* at the *Phœnix* in St. *Paul's Church Yard*, 1698.

THE STATIONER TO THE READER.

THE *ensuing* Essay *concerning the* Growth *of the* City *of* London, *was Entitled* [Another Essay] *intimating that some other* Essay *had preceded it, which was not to be found. I having been much importuned for that precedent* Essay, *have found that the same was about the* Growth, Increase, *and* Multiplication *of Mankind, which Subject should in Order of* Nature, *precede that of*

the Growth *of the City of* London, *but am not able to procure the* Eſſay *it ſelf, only I have obtained from a Gentleman, who ſometimes correſponded with Sir* William Petty, *an Extract of a Letter from Sir* William *to him, which I verily believe containeth the ſcope thereof; wherefore, I muſt deſire the Reader to be content therewith, till more can be had.*

The Extract of a Letter *concerning the Scope of an* Essay *intended to precede* another Essay *concerning the Growth of the* City *of* London, *&c.*

An Essay *in* Political Arithmetick, *concerning the Value and Increase of* People *and* Colonies.

THE Scope of this *Essay*, is concerning People and Colonies, and to make way for another *Essay* concerning the *Growth* of the *City* of *London*. I desire in this first *Essay*, to give the World some light, concerning the Numbers of People in *England*, with *Wales*, and in *Ireland*;

as alſo, of the Number of Houſes and Families, wherein they live, and of Acres they occupy.

2. How many live upon their *Lands*, how many upon their *Perſonal Eſtates* and *Commerce*, and how many upon *Art* and *Labour*; how many upon *Alms*, how many upon *Offices* and *Publick Employments*, and how many as *Cheats* and *Thieves*; how many are *Impotent*, *Children*, and *decrepit old Men*.

3. How many upon the *Poll-Taxes* in *England*, do pay extraordinary Rates, and how many at the Level.

4. How many Men and Women are *Prolifick*, and how many of each are Married and Unmarried.

5. What the Value of People are in *England*, and what in *Ireland* at a *Medium*, both as Members of the *Church* or *Commonwealth*, or as *Slaves* and Servants to one another; with a Method how to eſtimate the ſame, in any other *Country* or *Colony*.

6. How to compute the Value of Land in *Colonies*, in compariſon to *England* and *Ireland*.

7. How

7. How Ten Thouſand People in a *Colony* may be, and planted to the beſt advantage.

8. A Conjecture in what Number of Years *England* and *Ireland* may be fully peopled, as alſo all *America*; and laſtly the whole habitable Earth.

9. What ſpot of the *Earth's-Globe* were fitteſt for a general and univerſal *Emporium*, whereby all the People thereof may beſt enjoy one anothers Labours and Commodities.

10. Whether the ſpeedy peopling of the Earth would make,

1. For the good of Mankind.
2. To fulfil the revealed *Will* of *God*.
3. To what *Prince* or *State* the ſame would be moſt advantageous.

11. An Exhortation to all thinking Men, to ſalve the Scriptures and other good Hiſtories, concerning the *Number* of *People* in all *Ages* of the *World*, in the great *Cities* thereof, and elſewhere.

12. An Appendix concerning the different Number of *Sea-Fiſh* and *Wild-Fowl*,

Fowl, at the end of every Thousand Years, since *Noah*'s Flood.

13. An *Hypotheſis* of the uſe of thoſe Spaces (of about 8000 Miles through) within the *Globe* of our *Earth*, ſuppoſing a Shell of 150 Miles thick.

14. What may be the meaning of *Glorified Bodies*, in caſe the place of the Bleſſed ſhall be without the Convex of the Orb of the *fixed Stars*, if that the whole Syſtem of the *World* was made for the uſe of our *Earth*'s *Men*.

The

The Principal Points of this Diſcourſe.

1. THAT London *doubles in Forty Years, and all* England *in Three Hundred and Sixty Years.*

2. *That there be,* Anno 1682. *about Six Hundred and Seventy Thouſand Souls in* London; *and about Seven Millions, Four Hundred Thouſand in all* England *and* Wales, *and about Twenty Eight Millions of Acres of profitable Land.*

3. *That the Periods of doubling the People, are found to be in all Degrees, from between Ten to Twelve Hundred Years.*

4. *That the Growth of* London *muſt ſtop of itſelf, before the Year* 1800.

5. *A Table helping to underſtand the* Scriptures, *concerning the Number of People mentioned in them.*

6. *That the* World *will be fully Peopled within the next Two Thouſand Years.*

7. *Twelve*

7. *Twelve ways whereby to Try any Propoſal, pretended for the publick Good.*

8. *How the City of* London *may be made (morally ſpeaking)* Invincible.

9. *An help to Uniformity in Religion.*

10. *That 'tis poſſible to increaſe Mankind by Generation four times more than at preſent.*

11. *The Plagues of* London *are the Chief Impediment and Objection againſt the Growth of the City.*

12. *That an exact Account of the People is neceſſary in this Matter.*

Of

Of the Growth of the City of LONDON, *and of the Meaſures, Periods, Cauſes and Conſequences thereof.*

BY the City of *London*, we mean the Houſing within the Walls of the Old City, with the Liberties thereof, *Weſtminſter*, the *Borough* of *Southwark*, and ſo much of the built Ground in *Middleſex* and *Surrey*, whoſe Houſes are contiguous unto, or within Call of thoſe afore-mentioned. Or elſe we mean the Houſing which ſtand upon the Ninety Seven Pariſhes within the Walls of *London*; upon the Sixteen Pariſhes next, without them; the Six Pariſhes of *Weſtminſter*, and the Fourteen out-Pariſhes in *Middleſex* and *Surrey*, contiguous to the former, all which One Hundred and Thirty Three Pariſhes are comprehended

what is meant by London.

hended within the Weekly *Bills* of *Mortality*.

What is meant by the Growth of London.

The Growth of this City is measured, 1. By the Quantity of Ground, or Number of Acres upon which it stands. 2. By the Number of Houses, as the same appears by the Hearth-Books and late *Maps*. 3. By the Cubical Content of the said Housing. 4. By the Flooring of the same. 5. By the Number of Days-work, or Charge of Building the said Houses. 6. By the Value of the said Houses, according to their yearly Rent, and Number of Years Purchase. 7. By the Number of Inhabitants; according to which latter Sense only, we make our Computation in this Essay.

Till a better Rule can be obtained, we conceive that the Proportion of the People may be sufficiently measured by the Proportion of the *Burials* in such Years as were neither remarkable for extraordinary Healthfulness or Sicklyness.

In what Measures the City hath increased.

That the City hath Increased in this latter Sense, appears from the *Bills* of *Mortality*, represented in the two following Tables, *viz.* One whereof is a continuation for Eighteen Years, ending 1682. of that Table which was publish-

ed

ed in the 117. *Page* of the Book of the Obſervations upon the *London* Bills of *Mortality*, Printed in the Year 1676. The other ſheweth what Number of People died at a *Medium* of two Years, indifferently taken, at about Twenty Years diſtance from each other.

The firſt of the ſaid two Tables.

Anno Dom.	97 Pariſhes.	16 Pariſhes.	Out-Pariſhes.	Buried in all.	Beſides of the Plag	Chriſtn'd
1665	5320	12463	10925	28708	68596	9967
1666	1689	3969	5082	10740	1998	8997
1667	761	6405	8641	15807	35	10938
1668	796	6865	9603	17267	14	11633
1669	1323	7500	10440	19263	3	12335
1670	1890	7808	10500	20198		11997
1671	1723	5938	8063	15724	5	12510
1672	2237	6788	9200	18225	5	12593
1673	2307	6302	8890	17499	5	11895
1674	2801	7522	10875	21198	3	11851
1675	2555	5986	8702	17243	1	11775
1676	2756	6508	9466	18730	2	12399
1677	2817	6632	9616	19065	2	12626
1678	3060	6705	10908	20673	5	12601
1679	3074	7481	11173	21728	2	12288
1680	3076	7066	10911	21053		12747
1681	3669	8136	12166	23971		13355
1682	2975	7009	10707	20691		12 3

According to which latter Table there died as followeth.

The

The latter of the ſaid two Tables.

There died in *London*,

At a *Medium* between the Years

1604 and 1605	5135.	A.
1621 and 1622	8527.	B.
1641 and 1642	11883.	C.
1661 and 1662	15148.	D.
1681 and 1682	22331.	E.

Wherein obſerve, That the Number C. is double to A. and 806 over. That D. is double to B. within 1906. That C. and D. is double to A. B. within 293. That E. is double to C. within 1435. That D. and E. is double to B. and C. within 3341. And that C. and D. and E. are double to A. and B. and C. within 1736. And that E. is above Quadruple to A. All which Differences (every way conſidered) do allow the doubling of the People of *London* in Forty Years, to be a ſufficient eſtimate thereof in round Numbers, and without the trouble of Fractions. We alſo ſay, That 669930 is near the Number of People now in *London*, becauſe the Burials are 22331. which

which multiplied by 30, (one dying yearly out of 30, as appears in the 94 *p.* of the afore-mentioned Obſervations) maketh the ſaid Number; and becauſe there are 84000 tenanted Houſes (as we are credibly informed) which at eight in each, makes 672000 Souls; the ſaid two Accounts differing inconſiderably from each other.

We have thus pretty well found out in what Number of Years (*viz.* in about 40) that the City of *London* hath doubled, and the preſent Number of *Inhabitants* to be about 670000. We muſt now alſo endeavour the ſame for the whole *Territory* of *England* and *Wales*. In order whereunto, we

Firſt ſay, That the Aſſeſſment of *London* is about an † Eleventh part of the whole Territory, and therefore that the People of the whole may well be Eleven times that of *London*, *viz.* about ‖ Seven Millions, Three Hundred Sixty Nine Thouſand Souls; with which Account that of the *Poll-Money*, *Hearth-Money*, and the Biſhops late numbring of the *Communicants*, do pretty well agree; wherefore although the ſaid Number of Seven Millions, Three Hundred Sixty Nine Thouſand, be not (as it cannot be) a *demon-*

† *The People of* London *are about the* 11*th. part of all* England *and* Wales.

‖ *The People of* England *about ſeven Millions and Four Hundred Thouſand.*

demonſtrated Truth, yet it will ſerve for a good *Suppoſition*, which is as much as we want at preſent.

As for the time in which the People double, it is yet more hard to be found: For we have good Experience (in the ſaid 94 *pag.* of the afore-mentioned Obſervations) that in the Country, but one of fifty die *per Annum*; and by other late Accounts, that there have been ſometimes but Twenty Four *Births* for Twenty Three *Burials*: The which two Points, if they were univerſally, and conſtantly true, there would be colour enough to ſay, that the People doubled but in about 1200 Years. As for Example: Suppoſe there be 600 People, of which let a fiftieth part die *per Annum*, then there ſhall die Twelve *per Annum*; and if the Births be as Twenty Four to Twenty Three, then the Increaſe of the People ſhall be ſomewhat above half a Man *per Annum*, and conſequently the ſuppoſed Number of 600, cannot be doubled but in 1126 Years, which to reckon in round Numbers, and for that the afore-mentioned Fractions were not exact, we had rather call 1200.

There

There are alſo other good *Obſervations*, That even in the Country, one in about 30, or 32 *per Annum* hath died, and that there have been five *Births* for four *Burials*. Now, according to this Doctrine, 20 will die *per Annum* out of the above 600, and 25 will be born, ſo as the *Increaſe* will be 5, which is a hundred and twentieth part of the ſaid 600. So as we have two fair *Computations*, differing from each other as one to ten; and there are alſo ſeveral other good *Obſervations* for other *Meaſures*.

I might here inſert, That altho the Births in this laſt Computation be 25 of 600, or a Twenty fourth part of the People; yet that in Natural poſſibility, they may be near thrice as many, and near 75. For that by ſome late *Obſervations*, the *Teeming* Females between 15 and 44, are about 180 of the ſaid 600, and the *Males* of between 18 and 59, are about 180 alſo, and that every Teeming *Woman* can bear a *Child* once in two Years; from all which it is plain, that the *Births* may be 90, (and abating 15 for *Sickneſs*, Young *Abortions*, and *Natural Barrenneſs*) there may remain 75 Births, which is an Eighth of the People; which by ſome Obſervati-

ons we have found to be but a *two-and thirtieth part*, or but a *quarter* of what is thus ſhewn to be Naturally poſſible. Now, according to this Reckoning, if the *Births* may be 75 of 600, and the *Burials* but 15, then the *Annual Increaſe* of the People will be 60; and ſo the ſaid 600 People may double in 10 Years, which differs yet more from 1200, abovementioned. Now to get out of this Difficulty, and to temper thoſe vaſt diſagreements, I took the *Medium* of 50 and 30 dying *per Annum*, and pitch'd upon 40; and I alſo took the *Medium* between 24 *Births* and 23 *Burials*, and 5 *Births* for 4 *Burials*, *viz.* allowing about 10 *Births* for 9 *Burials*; upon which Suppoſition, there muſt die 15 *per Annum* out of the above-mentioned 600, and the *Births* muſt be 16 *and two thirds*, and the Increaſe 1, and two Thirds, or five Thirds of a Man, which Number compared with 1800 *Thirds*, or 600 Men, gives 360 Years for the time of doubling (including ſome Allowance for *Wars*, *Plagues*, and *Famine*; the Effects whereof, though they be *Terrible* at the Times and Places where they happen, yet in a period of 360 Years, is no great matter in the whole

That the time of doubling is here, and now 360 Years.

whole Nation. For the Plagues of *England* in 20 Years hath carried away ſcarce an Eightieth part of the People of the whole Nation; and the late 10 Years *Civil Wars*, (the like whereof hath not been in ſeveral Ages before) did not take away above a fortieth part of the whole People.)

According to which Account or Meaſure of doubling, if there be now in *England* and *Wales*, 7 Millions 400 Thouſand People, there were about 5 Millions 526 Thouſand in the beginning of Queen *Elizabeths* Reign, *Anno* 1560, and about two Millions at the *Norman Conqueſt*; of which Conſult the *Dooms-day Book*, and My Lord *Hale's Origination* of *Mankind*.

Memorandum, That if the People double in 360 Years, that the preſent 320 Millions, computed by ſome Learned Men, (from the Meaſures of all the Nations of the World, their degrees of being Peopled, and good Accounts of the People in ſeveral of them) to be now upon the face of the Earth, will within the next 2900 Years, ſo increaſe, as to give one Head for every two Acres of Land in the *Habitable* part of the *Earth*. And then, according to the *Prediction* of the

320 Millions now in the World.

Scriptures, there must be *Wars* and great *Slaughter*, &c.

Wherefore, as an *Expedient* against the above-mentioned difference between 10 and 1200 Years, we do for the present, and in this Country admit of 360 Years to be the time wherein the People of *England* do double, according to the present *Laws* and *Practice* of *Marriages*.

Now, if the City double its People in 40 Years, and the present Number be 670 Thousand, and if the *whole Territory* be 7 Millions 400 Thousand, and double in 360 Years, as aforesaid; then by the underwritten Table it appears, that *Anno* 1840, the People of the City will be 10718880, and those of the whole Country but 10917389, which is but inconsiderably more. Wherefore it is certain and necessary that the *Growth* of the City must stop before the said Year 1840; and will be at its utmost height in the next preceding Period, *Anno* 1800, when the Number of the City will be Eight times its present Number, *viz.* 5 Millions 359 Thousand. And when (besides the said Number) there will be 4 Millions 466 Thousand to perform the *Tillage*, *Pasturage*, and other Rural Works neces-

sary

ſary to be done without the ſaid City, as by the following Table, *viz.*

	Annis.	Burials.	People in *London.*	People in *England.*
As in the former Tab.	1565	2568	77040	5526929
	1605	5135		
	1642	11883		
	1682	22331	669930	7369230
	1722	44662		
	1762	89324		
	1802	178648	5359440	9825650
	1842	357296	10718889	19917389

Now, when the People of *London* ſhall come to be ſo near the People of all *England*, Then it follows, that the *Growth* of *London* muſt ſtop before the ſaid Year 1842, as aforeſaid, and muſt be at its greateſt height *Anno* 1800, when it will be eight times more than now, with above 4 Millions for the Service of the *Country* and Ports, as aforeſaid.

That London will be at its higheſt growth, and eight times as great as now, Anno 1800.

Of the afore-mentioned vaſt difference between 10 Years and 1200 Years for *doubling* the People, we make this uſe, *viz.* To juſtifie the *Scriptures* and all other good *Hiſtories* concerning the *Number* of the People in Ancient Time. For ſuppoſing the Eight *Perſons* who came out of the *Ark*, *Increaſed* by a Progreſſive doubling in every 10 Years, might grow

A digreſſion of the uſe of the vaſt difference between 10 and 1200 Years of doubling.

in the first 100 Years after the *Flood* from 8 to 8000, and that in 350 Years after the *Flood* (whenabout *Noah* died) to one Million, and by this time 1682, to 320 Millions (which by rational conjecture, are thought to be now in the World) it will not be hard to compute, how in the intermediate Years, the *Growths* may be made, according to what is set down in the following *Table*, wherein making the doubling to be 10 Years at first, and within 1200 Years at last, we take a discretionary liberty, but justifiable by Observations and the Scriptures for the rest; which Table we leave to be Corrected by *Historians*, who know the bigness of *Ancient Cities*, *Armies*, and *Colonies* in the respective *Ages* of the *World*: in the mean time affirming, that without such difference in the *Measures* and Periods for doubling (the extreams whereof we have demonstrated to be real and true) it is impossible to solve what is written in the Holy *Scriptures* and other *Authentick Books*. For if we pitch upon any one Number throughout for this purpose, 150 Years is the fittest of all round Numbers; according to which, there would have been but 512 Souls in the whole World in *Moses*'s time (being

(being 800 Years after the Flood) when 603 Thouſand *Iſraelites* of above 20 Years Old (beſides thoſe of other Ages, Tribes, and Nations) were found upon an exact Survey appointed by God; whereas our Table makes 12 Millions. And there would have been but 8000 in *David*'s Time, when were found 1100 Thouſand of above 20 Years Old (beſides others, as aforeſaid) in *Iſrael*, upon the Survey inſtigated by Satan; whereas our Table makes 32 Millions. And there would have been but a quarter of a Million about the Birth of Chriſt, or *Auguſtus* his Time, when *Rome* and the *Roman* Empire were ſo great; whereas our Table makes 100 Millions. Where Note, That the *Iſraelites* in about 500 Years, between their coming out of *Egypt* to *David*'s Reign, increaſed from 603 Thouſand to 1100 Thouſand.

On the other hand, if we pitch upon a leſs Number, as 100 Years, the World would have been over-peopled 700 Years ſince. Wherefore no one Number will ſolve the *Phænomena*; and therefore we have ſuppoſed ſeveral in order to make the following Table, which we again deſire Hiſtorians to Correct, ac-

cording to what they find in Antiquity concerning the Number of the People in each Age and Country of the World.

We did (not long ſince) aſſiſt a worthy Divine, writing againſt ſome *Scepticks*, who would have baffled our belief of the Reſurrection, by ſaying, that the whole Globe of the Earth could not furniſh Matter enough for all the Bodies that muſt Riſe at the laſt Day, much leſs would the ſurface of the Earth furniſh footing for ſo vaſt a Number; whereas we did (by the Method aforementioned) aſſert the Number of Men now living, and alſo of thoſe that had died ſince the beginning of the World; and did withal ſhew, that half the Iſland of *Ireland* would afford them all, not only Footing to ſtand upon, but Graves to lie down in, for that whole Number; and that two Mountains in that Country were as weighty as all the Bodies that had ever been from the beginning of the World to the Year 1680, when this Diſpute happened. For which purpoſe, I have digreſſed from my intended purpoſe, to inſert this *Matter*, intending to proſecute this hint further, upon ſome more proper Occaſion.

A Table ſhewing how the People might have doubled in the ſeveral Ages of the World.

Anno after the Flood.

Periods of doubling			
	1	8	Perſons.
	10	16	
	20	32	
	30	64	
	40	128	
In 10 Years	50	256	
	60	512	
	70	1024	
	80	2048	
	90	4096	
	100	8000	and more.
	120 Years after		
In 20 Years	the Flood.	16	Thouſand.
	140	32	
	170	64	
30			
	200	128	
40	240	256	
50	290	512	
60	350	1	Million and more.
70	420	2	Millions.
100	520	4	Millions.
190	710	8	Millions.
290	1000	16	In *Moſes* Time.
400	1400	32	About *Davids* Time.
550	1950	64	
750	2700	128	About the Birth of
1000	3700	256	Chriſt.
300			
In	4000	320	
1000			

It

It is here to be noted, That in this Table we have assigned a different Number of Years for the time of doubling the People in the several Ages of the *World*, and might have done the same for the several *Countries* of the *World*, and therefore the said several *Periods* assigned to the *whole World* in the *Lump*, may well enough consist with the Three Hundred and Sixty Years, especially assigned to *England*, between this day, and the *Norman* Conquest; and the said Three Hundred and Sixty Years may well enough serve for a Supposition between this time, and that of the *World's* being fully Peopled: Nor do we lay any stress upon one or the other in this Disquisition concerning the *Growth* of the City of *London*.

We have spoken of the *Growth* of *London*, with the Measures and Periods thereof, we come next to the Causes and Consequences of the same.

The Causes of its *Growth* from 1642 to 1682, may be said to have been as followeth, *viz.* From 1642 to 1650, that Men came out of the *Country* to *London*, to shelter themselves from the Outrages of the *Civil Wars*, during that time;

from

from 1650 to 1660, the *Royal Party* came to *London*, for their more private and inexpenſive Living; from 1660 to 1670, the *King's Friends* and *Party* came to receive his *Favours* after his *Happy Reſtauration*; from 1670 to 1680, the frequency of *Plots* and Parliaments, might bring extraordinary Numbers to the City; but what Reaſons to aſſign for the like *Increaſe* from 1604 to 1642, I know not, unleſs I ſhould pick out ſome *Remarkable Accident* happening in each part of the ſaid *Period*, and make that to be the Cauſe of this *Increaſe* (as vulgar People make the Cauſe of every Man's Sickneſs to be what he did laſt eat) wherefore, rather than ſo to ſay, *quidlibet de quolibet*; I had rather quit even what I have above-ſaid to be the Cauſe of *London's Increaſe* from 1642 to 1682, and put the whole upon ſome natural and ſpontaneous *Benefits* and Advantages that Men find by living in great more than in ſmall *Societies*; and ſhall therefore ſeek for the *Antecedent Cauſes* of this *Growth*, in the *Conſequences* of the like, conſidered in greater *Characters* and *Proportions*.

Now,

Now, whereas in Arithmetick, out of two falſe *Poſitions* the Truth is extracted, ſo I hope out of two *extravagant* contrary Suppoſitions, to draw forth ſome ſolid and conſiſtent *Concluſion*, viz.

The firſt of the ſaid two Suppoſitions is, That the City of *London* is ſeven times bigger than now, and that the *Inhabitants* of it are four Millions Six Hundred and Ninety Thouſand People; and that in all the other *Cities*, *Ports*, *Towns* and *Villages*, there are but two Millions Seven Hundred and Ten Thouſand more.

The other *Suppoſition* is, That the City of *London* is but a ſeventh part of its preſent bigneſs, and that the *Inhabitants* of it are but Ninety Six Thouſand, and that the reſt of the Inhabitants (being Seven Millions Three Hundred Four Thouſand) do co-habit thus, One Hundred Four Thouſand of them in ſmall *Cities* and *Towns*, and that the reſt, being ſeven Millions Two Hundred Thouſand, do inhabit in *Houſes* not contiguous to one another, *viz.* In Twelve Hundred Thouſand Houſes, having about Twenty Four Acres of Ground belonging to each of

of them, accounting about Twenty Eight Millions of Acres to be in the whole *Territory* of *England*, *Wales*, and the adjacent *Iſlands*; which any Man that pleaſes may examine upon a good Map.

Now, the Queſtion is, In which of theſe imaginary States, would be the moſt convenient, commodious and comfortable Livings?

But this general Queſtion divides it ſelf into the ſeveral Queſtions, relating to the following Particulars, *viz.*

1. For the *Defence* of the Kingdom againſt Foreign Powers.

2. For preventing the *Inteſtine Commotions* of *Parties* and *Factions*.

3. For *Peace* and *Uniformity* in *Religion*.

4. For the *Adminiſtration* of *Juſtice*.

5. For the proportionably *Taxing* of the People, and eaſie *Levying* the ſame.

6. For *Gain* by Foreign Commerce.

7. For *Husbandry*, *Manufacture*, and for *Arts* of Delight and Ornament.

8. For leſſening the Fatigue of *Carriages* and *Travelling*.

9. For

9. For preventing *Beggars* and *Thieves*.

10. For the Advancement and Propagation of *Useful Learning*.

11. For *Increasing* the People by *Generation*

12. For preventing the Mischiefs of *Plagues* and *Contagions*. And withal, which of the said two States is most Practicable and Natural; for in these and the like Particulars, do lie the *Tests* and *Touchstones* of all *Proposals*, that can be made for the Publick Good.

First, as to *Practicable*, we say, That although our said Extravagant Proposals are both in Nature possible, yet it is not Obvious to every Man to conceive, how *London*, now seven times bigger than in the beginning of Queen *Elizabeth*'s *Reign*, should be seven times bigger than now it is, and Forty Nine times bigger than *Anno* 1560. To which I say, 1. That the present City of *London* stands upon less than Two Thousand Five Hundred Acres of Ground; wherefore a City seven times as large may stand upon Ten Thousand Five Hundred Acres, which is about equivalent to a Circle of Four Miles and a half in Diameter,

Diameter, and leſs than Fifteen Miles in Circumference. 2. That a Circle of Ground of Thirty Five Miles Semi-Diameter will bear *Corn*, *Garden-ſtuff*, *Fruits*, *Hay*, and *Timber* for the Four Millions Six Hundred and Ninety Thouſand Inhabitants of the ſaid City and Circle, ſo as nothing of that kind need be brought from above Thirty Five Miles diſtance from the ſaid City; for the Number of Acres within the ſaid Circle, reckoning Two Acres ſufficient to furniſh *Bread* and *Drink-Corn* for every Head, and Two Acres will furniſh Hay for every neceſſary Horſe; And that the Trees which may grow in the Hedge-rows of the Fields within the ſaid Circle, may furniſh *Timber* for Six Hundred Thouſand Houſes. 3. That all live Cattel and great Animals can bring themſelves to the ſaid City; and that Fiſh can be brought from the *Lands-end* and *Berwick*, as eaſily as now. 4. Of *Coals* there is no doubt: And for Water, Twenty Shillings *per* Family (or Six Hundred Thouſand Pounds *per Annum* in the whole) will ſerve this *City*, eſpecially with the help of the *New-River*. But if by Practicable be underſtood, that the

the preſent State may be ſuddenly chang-ed into either of the Two above-men-tioned Propoſals, I think it is not *Pra-cticable*. Wherefore the true Queſtion is, unto or towards which of the ſaid Two extravagant States is beſt to bend the preſent State by degrees, *viz.* Whether it be beſt to leſſen or enlarge the pre-ſent City? In order whereunto, we en-quire (as to the firſt Queſtion) which State is moſt *Defenſible* againſt *Foreign Powers*; ſaying, That if the above-men-tioned Houſing, and a Border of Ground, of Three Quarters of a Mile broad, were encompaſſed with a Wall and Ditch of Twenty Miles about (as ſtrong as any in *Europe*, which would coſt but a Million, or about a Peny in the Shil-ling of the Houſe-Rent for one Year) what *Foreign Prince* could bring an Army from beyond Seas, able to beat, 1. Our Sea-Forces, and next with Horſe harraſs'd at Sea, to reſiſt all the freſh Horſe that *England* could make, and then Conquer above a Million of Men, well United, Diſciplin'd, and Guarded within ſuch a *Wall*, diſtant every where Three Quar-ters of a Mile from the Houſing, to e-lude the *Granadoes* and great Shot of the

Enemy?

Enemy? 2. As to *Inteſtine Parties* and *Factions*, I ſuppoſe that Four Millions Six Hundred and Ninety Thouſand People united within this great City, could eaſily Govern half the ſaid Number ſcattered without it; and that a few Men in Arms within the ſaid City and Wall, could alſo eaſily Govern the reſt unarmed, or armed in ſuch a manner as the *Sovereign* ſhall think fit. 3. As to *Uniformity in Religion*, I conceive, That if St. *Martin's* Pariſh (may as it doth) conſiſt of about Forty Thouſand Souls, That this great City alſo may as well be made but as one Pariſh, with Seven times One Hundred and Thirty Chappels, in which might not only be an Uniformity of Common Prayer, but in Preaching alſo; for that a Thouſand Copies of one Judiciouſly and Authentically compoſed *Sermon*, might be every Week read in each of the ſaid *Chappels* without any ſubſequent Repetition of the ſame, as in the Caſe of Homilies. Whereas in *England* (wherein are near Ten Thouſand Pariſhes, in each of which upon *Sundays*, *Holy-Days*, and other extraordinary Occaſions, there ſhould be about One Hundred Sermons *per Annum*, making

C

making about a Million of Sermons *per Annum* in the whole :) It were a Miracle, if a Million of Sermons compoſed by ſo many Men, and of ſo many Minds and Methods, ſhould produce *Uniformity* upon the diſcompoſed Underſtandings of about Eight Millions of Hearers.

4. As to the *Adminiſtration* of *Juſtice*. If in this great City ſhall dwell the Owners of all the Lands and other valuable Things in *England*; if within it ſhall be all the *Traders*, and all the *Courts*, *Offices*, *Records*, *Juries*, and *Witneſſes*; then it follows, that *Juſtice* may be done with ſpeed and eaſe.

5. As to the *Equality* and eaſie *Levying* of Taxes. It is too certain, that *London* hath at ſome times paid near half the Exciſe of *England*; and that the People pay thrice as much for the Hearths in *London*, as thoſe in the Country, in proportion to the People of each; and that the Charge of Collecting theſe Duties, have been about a ſixth part of the Duty it ſelf. Now, in this great City, the Exciſe alone, according to the preſent Laws, would not only be double to the whole Kingdom, but alſo more equal.

And

And the Duty of Hearths of the ſaid City, would exceed the preſent proceed of the whole Kingdom: And as for the *Cuſtoms*, we mention them not at preſent.

6. Whether more would be *gained* by *Foreign Commerce*?

The Gain which *England* makes by *Lead*, *Coals*, the Freight of Shipping, *&c.* may be the ſame, for ought I ſee, in both Caſes. But the Gain which is made by *Manufactures*, will be greater, as the Manufacture it ſelf is greater and better. For in ſo vaſt a City *Manufactures* will beget one another, and each *Manufacture* will be divided into as many parts as poſſible, whereby the Work of each *Artiſan* will be ſimple and eaſie; as for Example. In the making of a *Watch*, if one Man ſhall make the *Wheels*, another the *Spring*, another ſhall Engrave the *Dial-plate*, and another ſhall make the *Caſes*, then the *Watch* will be better and cheaper, than if the whole Work be put upon any one Man. And we alſo ſee that in *Towns*, and in the *Streets* of a great *Town*, where all the *Inhabitants* are almoſt of one Trade, the Commodity peculiar to thoſe places is made

better and cheaper than elſewhere. Moreover, when all ſorts of Manufactures are made in one place; there every Ship that goeth forth, can ſuddenly have its Loading of ſo many ſeveral Particulars and Species, as the Port whereunto ſhe is bound can take off. Again, when the ſeveral *Manufactures* are made in one place, and ſhipped off in another, the *Carriage*, *Poſtage*, and *Travelling-Charges* will inhance the Price of ſuch *Manufacture*, and leſſen the Gain upon *Foreign Commerce*. And laſtly, when the imported Goods are ſpent in the Port it ſelf, where they are landed, the Carriage of the ſame into other places will create no ſurcharge upon ſuch Commodity; all which particulars tend to the greater Gain by *Foreign Commerce*.

7. As for *Arts* of *Delight* and *Ornament*.

They are beſt promoted by the greateſt Number of *Emulators*. And it is more likely that one *ingenious*, *curious Man* may rather be found out amongſt Four Millions than Four Hundred Perſons. But as for *Husbandry*, viz. *Tillage* and *Paſturage*, I ſee no Reaſon, but the ſecond State (when each Family is charged with the

the Culture of about Twenty Four Acres) will beſt promote the ſame.

8. As for leſſening the Fatigue of *Carriage* and *Travelling*.

The thing ſpeaks it ſelf; for if all the Men of Buſineſs, and all *Artiſans* do live within Five Miles of each other: And if thoſe who live without the great City, do ſpend only ſuch Commodities as grow where they live, then the Charge of Carriage and Travelling could be little.

9. As to the preventing of *Beggars* and *Thieves*.

I do not find how the differences of the ſaid two States ſhould make much difference in this particular; for Impotents (which are but One in about Six Hundred) ought to be maintained by the reſt. 2. Thoſe who are unable to Work, through the evil Education of their *Parents*, ought (for ought I know) to be maintained by their neareſt Kindred, as a juſt Puniſhment upon them. 3. And thoſe who cannot find Work (though able and willing to perform it) by reaſon of the unequal application of Hands to Lands, ought to be provided for by the *Magiſtrate* and *Landlord* till that can

be done; for there needs be no *Beggars* in Countries, where there are many Acres of unimproved improvable Land to every Head, as there are in *England*. As for *Thieves*, they are for the moſt part begotten from the ſame Cauſe; for it is againſt Nature, that any Man ſhould venture his Life, Limb, or Liberty, for a wretched Livelihood, whereas moderate Labour will produce a better. But of this ſee Sir *Thomas Moor*, in the firſt part of his *Utopia*.

10. As to the *Propagation* and *Improvement* of *Uſeful Learning*.

The ſame may be ſaid concerning it, as was above-ſaid concerning *Manufactures*, and the *Arts* of *Delight* and *Ornament*; for in the great vaſt City, there can be no ſo odd a Conceit or Deſign, whereunto ſome Aſſiſtance may not be found, which in the thin, ſcattered way of Habitation may not be.

11. As for the *Increaſe* of *People* by *Generation*,

I ſee no great difference from either of the two States, for the ſame may be hindred or promoted in either, from the ſame Cauſes.

12. As

12. As to the *Plague*.

It is to be remembred, that one time with another, a *Plague* happeneth in *London* once in Twenty Years, or thereabouts; for in the laſt Hundred Years, between the Years 1582 and 1682, there have been Five great *Plagues*, viz. *Anno* 1592, 1603, 1625, 1636 and 1665. And it is alſo to be remembred, that the *Plagues* of *London* do commonly kill one fifth part of the *Inhabitants*. Now, if the whole People of *England* do double but in Three Hundred and Sixty Years, then the Annual Increaſe of the ſame is but Twenty Thouſand, and in Twenty Years Four Hundred Thouſand. But if in the City of *London* there ſhould be Two Millions of People, (as there will be about Sixty Years hence) then the *Plague* (killing one fifth of them, namely, Four Hundred Thouſand once, in Twenty Years) will deſtroy as many in One Year, as the whole Nation can refuriſh in Twenty: And conſequently the People of the Nation ſhall never Increaſe. But if the People of *London* ſhall be above Four Millions (as in the firſt of our Two *extravagant* Suppoſitions is premiſed) then the People of the whole

Nation ſhall leſſen above Twenty Thouſand *per Annum*. So as if People be worth Seventy Pounds *per* Head (as hath elſewhere been ſhewn) then the ſaid greatneſs of the City will be a damage to it ſelf and the whole Nation of Fourteen Hundred Thouſand Pounds *per Annum*, and ſo *pro Rata*, for a greater or leſſer Number: wherefore to determine, which of the Two *States* is beſt, (that is to ſay, towards which of the ſaid Two *States*, *Authority* ſhould bend the preſent *State*) a juſt Balance ought to be made between the Diſadvantages from the *Plague*, with the Advantages accruing from the other Particulars above-mentioned; unto which *Balance* a more exact Account of the People, and a better Rule for the Meaſure of its Growth is neceſſary, that what we have here given, or are yet able to lay down.

Poſt-

POSTSCRIPT.

IT was not very pertinent to a *Diſcourſe* concerning the *Growth* of the City of *London*, to thruſt in Conſiderations of the Time when the whole *World* will be fully Peopled; and how to juſtifie the *Scriptures* concerning the Number of People mentioned in them; and concerning the Number of the Quick and the Dead, that may riſe at the laſt Day, *&c.* Nevertheleſs, ſince ſome Friends liking the ſaid Digreſſions and Impertinences (perhaps as Sawce to a dry Diſcourſe) have deſired that the ſame might be explained and made out: I therefore ſay as followeth

1. If the Number of Acres in the habitable Part of the Earth, be under Fifty Thouſand Millions; if Twenty Thouſand Millions of People, are more than the ſaid Number of Acres will feed; (few

or

or no Countries being ſo fully peopled;) and for that in Six doublings (which will be in Two Thouſand Years) the preſent Three Hundred and Twenty Millions will exceed the ſaid Twenty Thouſand Millions.

2. That the Number of all thoſe who have died ſince the *Flood*, is the Sum of all the Products made by multiplying the Number of the doubling Periods mentioned in the firſt Column of the laſt Table, by the Number of People reſpectively affixed to them, in the third Column of the ſame Table; the ſaid Sum being divided by Forty (One dying out of Forty *per Annum*, out of the whole Maſs of Mankind) which Quotient is Twelve Thouſand Five Hundred and Seventy Millions; whereunto may be added, for thoſe that died before the *Flood*, enough to make the laſt mentioned Number Twenty Thouſand Millions, as the full Number of all that died, from the beginning of the World, to the Year 1682; unto which, if Three Hundred and Twenty Millions, the Number of thoſe who are now alive, be added, the total of the Quick and the Dead will amount but to One Fifth Part of the Graves, which the ſurface of *Ireland* will afford,

afford, without ever putting two Bodies into one Grave; for there be in *Ireland* Twenty Eight Thouſand ſquare *Engliſh* Miles, each whereof will afford about Four Millions of Graves, and conſequently above One Hundred and Fourteen Thouſand Millions of Graves, *viz.* about Five times the Number of the Quick and the Dead, which ſhould ariſe at the laſt Day, in caſe the ſame had been in the Year 1682.

3. Now, if there may be place for five times as many Graves in *Ireland*, as are ſufficient for all that ever died; and if the Earth of one Grave weigh five times as much as the Body interred therein, then a Turf, leſs than a Foot thick, pared off from a fifth part of the ſurface of *Ireland*, will be equivalent in bulk and weight to all the Bodies that ever were Buried; and may ſerve as well for that purpoſe, as the Two Mountains afore-mentioned in the Body of this Diſcourſe. From all which it is plain, how madly they were miſtaken, who did ſo petulantly vilifie what the *Holy Scriptures* have delivered.

FINIS.

FURTHER OBSERVATIONS UPON THE Dublin Bills: OR, ACCOMPTS OF THE Houſes, Hearths, Baptiſms, and Burials in that CITY.

The Third Edition Corrected and Enlarged.

By Sir WILLIAM PETTY, late Fellow of the *Royal-Society.*

LONDON, Printed for *Robert Clavel* at the *Peacock*, and *Henry Mortlock* at the *Phœnix* in St. *Paul's Church Yard*, 1698.

THE STATIONER TO THE READER.

I Have not thought fit to make any Alteration of the First Edition, but have only added a New Table, with Observations upon it, placing the same in the Front of what was before; which perhaps

perhaps might have been as well placed after the like Table at the Eighth Page of the First Edition.

DUBLIN,

DUBLIN, 1682.

Parishes.	Houses	Fire-plac.	Bapt.	Buried
St. *James*	272	836	122	306
St. *Katherines*	540	2198		
St. *Nicholas* without, and St. *Patricks*	1064	4082	154	414
St. *Bridgets*	395	1903	68	149
St. *Audoens*	276	1510	56	164
St. *Michaels*	174	884	34	50
St. *Johns*	302	1636	74	101
St. *Nicholas* within, and Christ-Chur. *Lib.*	153	902	26	52
St. *Warbors*	240	1638	45	105
St. *Micans*	938	3516	124	389
St. *Andrews*	864	3638	131	300
St. *Kevans*	554	2120	87	233
Donobrook	253	506		
	6025	25369	912	2263

Further Observations upon the Dublin *Accompts of Baptisms and Burials, Houses and Hearths,* viz.

THE Table hath been made for the Year 1682, wherein is noted,

1. That the Houses which *Anno* 1671, were but Three Thousand Eight Hundred

and Fifty, are *Anno* 1682, Six Thouſand and Twenty Five; but whether this Difference is cauſed by the real encreaſe of Houſing, or by Fraud and Defect in the former Accompts, is left to Conſideration. For the Burials or People have increaſed but from One Thouſand Six Hundred Ninety Six, to Two Thouſand Two Hundred Sixty Three; according to which proportion, the Three Thouſand Eight Hundred and Fifty Houſes *Anno* 1671, ſhould *Anno* 1682, have been but Five Thouſand One Hundred and Forty Three, wherefore ſome fault may be ſuſpected as aforeſaid, when Farming the Hearth-Money was in agitation.

2. The Hearths have encreaſed according to the Burials, and One Third of the ſaid increaſe more, *viz.* The Burials, *Anno* 1671, were One Thouſand Six Hundred Ninety Six, the One Third whereof is Five Hundred Sixty Three, which put together, makes Two Thouſand Two Hundred Fifty Nine, which is near the Number of Burials *Anno* 1682. But the Hearths *Anno* 1671, were Seventeen Thouſand Five Hundred, whereof the One Third is Five Thouſand Eight Hundred Thirty Three, making in all but Twenty Three Thouſand Three Hundred

dred and Thirty Three; whereas the whole Hearths *Anno* 1682, were Twenty Five Thouſand Three Hundred and Sixty Nine, *viz.* One Third and better of the ſaid Five Thouſand Eight Hundred and Thirty Three more.

3. The Houſing were *Anno* 1671, but Three Thouſand Eight Hundred and Fifty, which if they had encreaſed *Anno* 1682. but according to the Burials, they had been but Five Thouſand One Hundred and Forty Three, or according to the Hearths, had been but Five Thouſand Four Hundred and Eighty Eight, whereas they appear Six Thouſand and Twenty Five, encreaſing double to the Hearths. So as 'tis likely there hath been ſome Error in the ſaid Account of the Houſing, unleſs the new Houſing be very ſmall, and have but one Chimney apiece, and that one fourth Part of them are untenanted. On the other hand, 'tis more likely that when Sixteen Hundred Ninety Six died *per Annum*, there were near Six Thouſand; for Six Thouſand Houſes at Eight Inhabitants *per* Houſe, would make the Number of the People to be Forty Eight Thouſand, and the Number of Sixteen Hundred Ninety Six that died according to the Rule of One out of Thirty,

would have made the Number of Inhabitants about Fifty Thouſand: For which Reaſon I continue to believe there was ſome Error in the Accompt of Three Thouſand Eight Hundred and Fifty Houſes as aforeſaid, and the rather becauſe there is no Ground from Experience to think, that in Eleven Years, the Houſes in *Dublin* have encreaſed from Three Thouſand Eight Hundred and Fifty, to Six Thouſand and Twenty Five.

Moreover, I rather think that the Number of Six Thouſand and Twenty Five is yet ſhort, becauſe that Number at Eight Heads *per* Houſe makes the Inhabitants to be but Forty Eight Thouſand Two Hundred; whereas the Two Thouſand Two Hundred and Sixty Three who died in the Year 1682, according to the afore-mentioned Rule of One dying out of Thirty, makes the Number of People to be Sixty Seven Thouſand Eight Hundred and Ninety; the *Medium* betwixt which Number and Forty Eight Thouſand Two Hundred, is Fifty Eight Thouſand and Forty Five, which is the beſt Eſtimate I can make of that Matter, which I hope Authority will e'er long rectifie, by direct and exact Enquiries.

4. As

4. As to the Births, we ſay that *Anno* 1640, 1641, and 1642, at *London*, juſt before the Troubles in Religion began, the Births were Five Sixths of the Burials, by reaſon I ſuppoſe of the greaterneſs of Families in *London* above the Country, and the fewer Breeders, and not for want of Regiſtring. Wherefore deducting One Sixth of Two Thouſand Two Hundred and Sixty Three, which is Three Hundred and Seventy Seven, there remains One Thouſand Eight Hundred and Eighty Six for the probable number of Births in *Dublin*, for the Year 1682; whereas but Nine Hundred and Twelve are repreſented to have been Chriſtn'd in that Year, though One Thouſand and Twenty Three were Chriſtn'd *Anno* 1671, when there died but One Thouſand Six Hundred and Ninety Six; which decreaſing of the Chriſtnings, and increaſing of the Burials, ſhews the increaſe of Non-Regiſtring in the Legal Books, which muſt be the increaſe of *Roman-Catholicks* in *Dublin*.

The Scope of this whole Paper therefore is, That the People of *Dublin* are rather Fifty Eight Thouſand, than Thirty Two Thouſand; and that the Diſſenters,

who do not Regiſter their Baptiſms, have encreaſed from Three Hundred Ninety One to Nine Hundred Seventy Four; but of Diſſenters, none have increaſed but the *Roman-Catholicks*, whoſe Numbers have encreaſed from about Two to Five in the ſaid Years. The exacter Knowledge whereof, may alſo be better had from direct Enquiries.

FINIS.

OBSERVATIONS UPON THE DUBLIN Bills of MORTALITY, 1681.

And the State of that

CITY.

THE Obſervations upon the *London Bills of Mortality* have been a new Light to the World; and the like Obſervations upon thoſe of *Dublin*, may ſerve as Snuffers to make the ſame Candle burn clearer.

The *London* Obſervations flowed from *Bills* regularly kept for near One hundred years; but theſe are ſqueezed out of Six ſtragling *London* Bills, out of Fifteen *Dublin Bills*, and from a Note of the *Fa-*

milies and *Hearths* in each *Pariſh* in *Dublin*; which are all digeſted into the following *Tables*, conſiſting of Three Parts, mark'd *A*, *B*, *C*; being indeed the *A*, *B*, *C*, of *Publick Oeconomy*, and even of that *Policy* which tends to Peace and Plenty.

Obſervations upon the Table A.

1. THE Total of the *Burials* in *London*, (for the ſaid Six ſtragling years mentioned in the Table *A)* is One hundred twenty thouſand one hundred and ſeventy; whereof the Medium or Sixth part is Twenty thouſand and twenty eight; and exceeds the Burials of *Paris*, as may appear by the late Bills of that City.

2. The *Births*, for the ſame time, are Seventy three thouſand ſix hundred eighty and three, the Medium or Sixth part whereof is Twelve thouſand two hundred and Eighty, which is about Five eighth parts of the *Burials*; and ſhews, that *London* would in time decreaſe quite away, were it not ſupplyed out of the Country,

Country, where are about Five *Births* for Four *Burials*, the proportion of Breeders in the Country being greater than in the City.

3. The *Burials* in *Dublin* for the ſaid Six years, were Nine Thouſand eight hundred ſixty five, the Sixth part or Medium whereof is, One thouſand ſix hundred forty and four, which is about the Twelfth part of the *London* Burials; and about a Fifth part over. So as the People of *London* do hereby ſeem to be above Twelve times as many as thoſe of *Dublin*.

4. The *Births* in the ſame time at *Dublin*, are Six thouſand one hundred fifty and ſeven, the Sixth part or Medium whereof is One thouſand twenty and ſix, which is alſo about five eighth parts of the One thouſand ſix hundred forty and four Burials; which ſhews, that the proportion between *Burials* and *Births* are alike at *London* and *Dublin*, and that the Accompts are kept alike; and conſequently are likely to be true, there being no Confederacy for that purpoſe: Which if they be true, we then ſay,

5. That the *Births* are the beſt way (till the Accompts of the People ſhall be purpoſely taken) whereby to judge of the

Increaſe

Increaſe and Decreaſe of People, that of *Burials* being ſubject to more Contingencies and variety of Cauſes.

6. If *Births* be as yet the meaſure of the People, and that the Births (as has been ſhewn) are as Five to Eight, then Eight fifths of the Births is the number of the Burials, where the year was not conſiderable for extraordinary Sickneſs or Salubrity; and is the Rule whereby to meaſure the ſame. As *for Example:* The Medium of Births in *Dublin* was One thouſand twenty and ſix, the Eight fifths whereof is One thouſand ſix hundred forty and one, but the real Burials were One thouſand ſix hundred forty and four; ſo as in the ſaid years they differed little from the One thouſand ſix hundred forty and one, which was the *Standard of Health*; and conſequently, the years 1680, 1674, and 1668, were *ſickly* years, more or leſs, as they exceeded the ſaid Number One thouſand ſix hundred forty and one; and the reſt were *healthful* years, more or leſs, as they fell ſhort of the ſame number. But the City was more or leſs *Populous*, as the Births differed from the Number One thouſand twenty and ſix; *viz. Populous* in the years 1680, 1679,

1679, 1678, and 1668: For other cauſes of this difference in Births, are very occult and uncertain.

7. What hath been ſaid of *Dublin*, ſerves alſo for *London*.

8. It hath already been obſerv'd by the *London* Bills, That there are more *Males* than *Females*. It is to be further noted, that in theſe Six *London* Bills alſo, there is not one inſtance either in the Births or Burials to the contrary.

9. It hath been formerly obſerv'd, That *in the years wherein moſt dye, feweſt are born, & vice versâ.* The ſame may be further obſerv'd in *Males* and *Females*, *viz.* When feweſt Males are born, then moſt dye: for here the Males dyed as Twelve to Eleven, which is above the mean proportion of Fourteen to Thirteen; but were born but as Nineteen to Eighteen, which is below the ſame.

Obſer-

Obſervations upon the Table B.

1. FRom the Table *B*, it appears, That the Medium of the Fifteen years Burials, (being Twenty four thouſand one hundred ninety and nine) is One thouſand ſix hundred and thirteen; whereas the Medium of the other ſix years in the Table *A*, was One thouſand ſix hundred forty and four, and that the Medium of the Fifteen years Births (being in all Fourteen thouſand ſeven hundred ſixty and five) is nine hundred eighty and four, whereas the Medium of the ſaid other ſix years, was One thouſand twenty and ſix. That is to ſay, there were both fewer Births and Burials in theſe fifteen years, than in the other ſix years; which is a probable ſign that at a Medium there were fewer People alſo.

2. The Medium of *Births* for the Fifteen years being Nine hundred eighty and four, whereof Eight fifths (being One thouſand five hundred ſeventy and ſix) is the *Standard of Health* for the ſaid Fifteen years; and the Triple of the ſaid One

One thouſand five hundred ſeventy and ſix, being Four thouſand ſeven hundred twenty and eight, is the ſtandard for each of the Ternaries of the Fifteen years within the ſaid Table.

3. That Two thouſand nine hundred fifty and two, the triple of Nine hundred eighty and four Births, is for each Ternary the Standard of Peoples increaſe and decreaſe from the year 1666 to 1680 incluſive, *viz.* The People increaſed in the ſecond Ternary, and decreaſed from the ſame in the Third and Fourth Ternaries, but re-increaſed in the Fifth Ternary beyond any other.

4. That the laſt Ternary was withal very healthful, the Burials being but Four thouſand ſix hundred twenty and four, *viz.* below Four thouſand ſeven hundred twenty and eight, the Standard.

5. That according to this proportion of increaſe, the Houſing of *Dublin* have probably increaſed alſo.

Obſer-

Obſervations upon the Table C.

1. FIrſt, from the Table *C*, it appears, That the Houſing of *Dublin* is ſuch, as that there are not five Hearths in each Houſe one with another, but nearer five than four.

2. That in St. *Warburgh*'s Pariſh are near ſix Hearths to an Houſe. In St. *John*'s five. In St. *Michael*'s above five. In St. *Nicolas within* above ſix. In *Chriſt Church* above ſeven. In St. *James*'s, and St *Katherines*, and in St. *Michan*'s, not four. In St. *Kevans* about four.

3. That in St. *James*'s, St. *Michan*'s, St. *Brides*, St. *Warburgh*'s, St. *Andrew*'s, St. *Michael*'s, and St. *Patrick*'s, all the Chriſtnings were but Five hundred and fifty, and the Burials One thouſand fifty and five, *viz.* near double; and that in the reſt of the Pariſhes the Chriſtnings were five, and the Burials ſeven, *viz.* as Four hundred fifty to Six hundred thirty and four. Now whether the cauſe of this difference were negligence in Accompts, or the greaterneſs of the Families, *&c*, is worth inquiring.

4. It

4. It is hard to ſay in what order (as to greatneſs) theſe Pariſhes ought to ſtand, ſome having moſt Families, ſome moſt Hearths, ſome moſt Births, and others moſt Burials. Some Pariſhes exceeding the reſt in two, others in three of the ſaid four particulars, but none in all four. Wherefore this Table ranketh them according to plurality of the ſaid four particulars wherein each excelleth the other.

5. The *London Obſervations* reckon eight heads to be in each Family; according to which eſtimation, there are Thirty two thouſand Souls in the Four thouſand Families of *Dublin*; which is but half of what moſt Men imagine: of which but about one ſixth part are able to bear Arms, beſides the Royal Regiment.

6. Without the knowledge of the true *number of People*, as a Principle, the whole ſcope and uſe of the keeping Bills of Births and Burials is impaired; wherefore by laborious Conjectures and Calculations to deduce the number of People from the Births and Burials, may be Ingenious, but very Prepoſterous.

7. If the number of *Families in Dublin* be about Four thouſand, then Ten Men

Men, in one week (at the Charge of about Five pound, Surveying Eight Families in an hour) may directly, and without Algebra, make an Ascompt of the whole People, expreſſing their ſeveral Ages, Sex, Marriages, Title, Trade, Religion, *&c.* and thoſe who ſurvey the Hearths, or the Conſtables or Pariſh-Clerks, (may, if required) do the ſame *ex Officio*, and without other Charge, by the Command of the Chief Governor, the Dioceſan, or the Mayor.

8. The Bills of *London* have ſince their beginning, admitted ſeveral Alterations and Improvements; and eight or ten pound *per annum* ſurcharge, would make the Bills of *Dublin* to exceed all others, and become an excellent Inſtrument of Government. To which purpoſe the Forms for Weekly, Quarterly, and Yearly Bills are humbly recommended, *viz.*

Yearly

Yearly Bills of Mortality for LONDON and DUBLIN.					LONDON.			
					Burials.		Births.	
Anno.	Burials.	Births.	Burials.	Births.	Males.	Femal.	Males.	Femal.
1680	21053	12747	1826	1096	11039	10044	6543	6199
1679	21730	12288	1397	1061	11154	10576	6247	6041
1678	20678	12601	1401	1045	10681	9977	6568	6033
1674	21201	11851	2106	942	11000	10196	6113	5738
1672	18230	12563	1436	987	9560	8070	6443	6120
1668	17278	11633	1699	1026	9111	8167	6073	5566
	120170	73683	9865	6157	62545	57030	37992	35697
The medium or 6th part whereof is	20028	12280	1644	1026	10424	9505	6332	5949

DUBLIN.				
Ann.	Burials	Births.	In Ternaries of Years.	
1666	1480	952		
1667	1642	1001	4821	2979
1668	1699	1026		
1669	1666	1000		
1670	1713	1067	5353	3070
1671	1974	1003		
1672	1436	967		
1673	1531	933	5073	2842
1674	2106	942		
1675	1578	823		
1676	1391	952	4328	2672
1677	1359	897		
1678	1401	1045		
1679	1397	1061	4624	3202
1680	1826	1096		
	24199	14765	24199	14765
The medium or 15th part whereof is	1613	984	1613	984

B

The

	The Parishes of *DUBLIN.*	*Anno* 1671. Famil.	Hearths.	*An.* 1670, 71, & 72. at a Med. Births.	Burials
1	St. *Katherines* and St. *James*,	661	2399	161	290
2	St. *Nicholas* without,	490	2348	207	262
3	St. *Michans*,	656	2301	127	221
4	St. *Andrews* with *Donabrook*,	483	2123	108	178
5	St. *Bridgets*,	416	1989	70	100
6	St. *Johns*,	244	1337	70	138
7	St. *Warbrough*,	267	1650	54	108
8	St. *Audaens*,	216	1081	53	121
9	St. *Michael*,	140	793	44	59
10	St. *Keavans*,	106	433	64	133
11	St. *Nicholas* within,	93	614	28	34
12	St. *Patrick's* Liberties,	52	255	21	44
13	Christ-Church and *Trinity*-College *per* estimate,	26	197		1
	Houses built between 1671, and 1681, *per* estimate,	3850 150	17500 550	1013	1696
		4000	18150		

A Quarterly Bill

Beginning and end.

	PARISHES Names.	1. Births.	2. Marriages.	Buried of	
				Under 16 years old.	Above 60 years old.
1	St. *Katherins* and St. *James*,				
2	St. *Nicholas* without,				
3	St. *Michans*,				
4	St. *Andr.* with *Donabrook*,				
5	St. *Bridgets*,				
6	St. *Johns*,				
7	St. *Warbrough*,				
8	St. *Audaens*,				
9	St. *Michael*,				
10	St. *Keavens*,				
11	St. *Nicholas* within,				
12	St. *Patrick's* Liberties,				
13	Christ-Church and *Trinity*-College.				
	Totals,				

ill of Mortality,

nd. ing for the City of *Dublin*.

All other Casualties.		
Infants under 2 years old.		
Aged above 70 years old.		
Sudden Death, Quinsey, Plurisie, Fever.		
Stone, Gout, Dropsie, Consumption.		
Plague, Small-Pox, Spotted Fever, Measels.		

Above 60

A Weekly Bill of Mortali-

Ending the day

	PARISHES Names.	Births.	Males.	Females.
1	St. *Katherines* and St. *James*,			
2	St. *Nicholas* without,			
3	St. *Michans*,			
4	St. *Andrews* with *Donabrook*,			
5	St. *Bridgets*,			
6	St. *Johns*,			
7	St. *Warbrough*,			
8	St. *Audaens*,			
9	St. *Michael*,			
10	St. *Keavens*,			
11	St. *Nicholas* within,			
12	St. *Patrick*'s Liberties,			
13	Christ-Church and *Trinity* College,			
	Totals,			

ty for the City of *Dublin*,
of 1681.

Spotted Fever.	Measels.	Small Pox.	Plague.	Above 6 years old.	Under 16 years old.	Burials.

An Account of the People

Ending the 24th

	PARISHES Names.	Number of Persons.	whereof { Males.	Females }
1	St. *Katherines* and St. *James*,			
2	St. *Nicolas* without,			
3	St. *Michans*,			
4	St. *Andrews* with *Donabrook*,			
5	St. *Bridgets*,			
6	St. *Johns*,			
7	St. *Warbrough*,			
8	St. *Audaens*,			
9	St. *Michael*,			
10	St. *Keavens*,			
11	St. *Nicholas* within,			
12	St. *Patrick*'s Liberties,			
13	Christ-Church and *Trinity*-College,			
	Totals,			

of *Dublin* for one year, of *March*, 168$\frac{1}{2}$.

Marriages.	
Burials.	
Births.	
Of all other Religions	
Papists	
Protestants	
of above 16 years old.	
Persons of Above 60 years old.	
Persons of Under 16 years old.	
Married persons.	

Casualties

Casualties and Diseases.	
Aged above 70 years.	Head-ach, and Megrim.
Abortive and Still-born.	Epilepsie, and Planet.
Childbed-women.	Fever, and Ague.
Convulsion	Pleurisie.
Teeth.	Quinsey.
Worms.	Executed, Murder'd, Drown'd
Gout, and Sciatica.	Plague, and Spotted-Fever.
Stone.	Griping of the Guts.
Palsey.	Scowring, Vomiting, Bleeding.
Consumption, and French Pox.	Small Pox.
Dropsie, and Tympany.	Measles.
Rickets, and Livergrown.	Neither of all the other sorts.

A

POSTSCRIPT

TO THE

STATIONER.

WHereas you complain, that theſe Obſervations make no ſufficient Bulk, I could anſwer you, That I wiſh the Bulk of all Books were leſs; but do nevertheleſs comply with you in adding what follows, *viz.*

1. That the Pariſhes of *Dublin* are very unequal; ſome having in them above Six hundred Families, and others under Thirty.

2. That Thirteen Pariſhes are too few for Four thouſand Families; the midling Pariſhes of *London* containing One hundred and twenty Families; according to which rate, there ſhould be about Thirty three Pariſhes in *Dublin*.

3. It

3. It is ſaid, that there are Eighty four thouſand Houſes or Families in *London*, which is Twenty one times more than are in *Dublin*; and yet the Births and Burials of *London* are but Twelve times thoſe of *Dublin*: which ſhews, that the Inhabitants of *Dublin*: are more crowded and ſtreightned in their Houſing, than thoſe of *London*; and conſequently, that to increaſe the Buildings of *Dublin*, will make that City more conformable to *London*.

4. I ſhall alſo add ſome Reaſons for altering the preſent forms of the *Dublin* Bills of Mortality, according to what hath been here recommended, *viz.*

1. We give the diſtinctions of Males and Females in the Births only; for that the Burials muſt, at one time or another, be in the ſame proportion with the Births.

2. We do in the Weekly and Quarterly Bills propoſe, that notice be taken in the Burials of what numbers dye above Sixty and Seventy, and what under Sixteen, Six, and Two yards old; foreſeeing good uſes to be made of that diſtinction.

3. We do in the Yearly Bill, reduce the Caſualties to about Twenty four, being ſuch as may be diſcerned by common

ſenſe

ſenſe and without Art; conceiving that more will but perplex and imbroil the Account. And in the Quarterly Bills we reduce the Diſeaſes to Three Heads, *viz.* Contagious, Acute, and Chronical; applying this diſtinction to Pariſhes, in order to know how the different Situation, Soil, and way of living in each Pariſh, doth diſpoſe Men to each of the ſaid Three Species: and in the Weekly Bills we take notice not only of the Plague, but of the other Contagious Diſeaſes in each Pariſh; that Strangers and fearful Perſons may thereby know how to diſpoſe of themſelves.

4. We mention the Number of the People, as the Fundamental Term in all our proportions; and without which, all the reſt will be almoſt fruitleſs.

5. We mention the number of Marriages made in every Quarter, and in every year; as alſo the proportion which Married Perſons bear to the whole; expecting in ſuch Obſervations to read the improvement of the Nation.

6. As for Religions, we reduce them to Three, *viz.* 1. Thoſe who have the Pope of *Rome* for their Head. 2. Who are Governed by the Laws of their Country. 3. Thoſe

3. Thoſe who rely reſpectively upon their own private Judgments. Now whether theſe diſtinctions ſhould be taken notice of or not, we do but faintly recommend, ſeeing many Reaſons *pro* and *con* for the ſame: and therefore although we have mentioned it as a matter fit to be conſidered, yet we humbly leave it to Authority.

TWO

ESSAYS

IN

Political Arithmetick,

Concerning the

People, Houſing, Hoſpitals, &c.

OF

LONDON and PARIS.

By Sir WILLIAM PETTY, late Fellow of the *Royal-Society.*

——*Qui ſciret Regibus uti*
Faſtidiret olus ——

LONDON, Printed for *Robert Clavel* at the *Peacock*, and *Henry Mortlock* at the *Phœnix*, in St. *Paul's Church-Yard*, 1699.

TO THE

KING'S

Moſt EXCELLENT

MAJESTY.

I *Do preſume, in a very ſmall Paper, to ſhew Your Majeſty, that Your* City *of* London *ſeems more conſiderable than the Two beſt* Cities *of the* French Monarchy, *and for ought I can find, greater than any other of the* Univerſe; *which becauſe I can ſay*

F *with-*

without flattery, and by ſuch Demonſtration as Your Majeſty can examine, I humbly pray Your Majeſty to accept from

Your Majeſty's

Moſt Humble, Loyal

and Obedient Subject,

William Petty.

AN

AN ESSAY IN Political ARITHMETICK, BY Sir *WILLIAM PETTY*,

Tending to prove, that *London* hath more People and Houſing than the Cities of *Paris* and *Rouen* put together, and is alſo more conſiderable in ſeveral other reſpects.

1. THE Medium of the *Burials* at *London* in the three laſt years, *viz.* 1683, 1684 and 1685, (wherein there was no extraordinary Sickneſs, and wherein the *Chriſtnings* do correſpond in their ordinary

proportions with the *Burials* and *Chriſtnings* of each year one with another) was Twenty two thouſand three hundred thirty and ſeven, and the like Medium of *Burials* for the three laſt *Paris* Bills we could procure, *viz.* for the years 1682, 1683 and 1684 (whereof the laſt, as appears by the *Chriſtnings*, ſeems to have been very ſickly) is Nineteen thouſand eight hundred eighty and ſeven.

2. The City of *Briſtol* in *England* appears to be by good eſtimate of its *Trade* and *Cuſtoms* as great as *Rouen* in *France*; and the City of *Dublin* in *Ireland* appears to have more Chimnies than *Briſtol*, and conſequently more People; and the *Burials* in *Dublin* were *Anno* 1682 (being a ſickly year) but Two thouſand two hundred ſixty and three.

3. Now the *Burials* of *Paris* (being Nineteen thouſand eight hundred eighty and ſeven) being added to the *Burials* of *Dublin* (ſuppoſed more than at *Rouen*) being Two thouſand two hundred ſixty and three, makes but Twenty two thouſand one hundred and fifty, whereas the *Burials* of *London* were One hundred eighty and ſeven more, or Twenty two thouſand three hundred thirty and ſeven, or as about ſix to ſeven.

4. If

4. If thoſe who die unneceſſarily, and by miſcarriage in *L'hoſtel Dieu* in *Paris* (being above Three thouſand) as hath been elſewhere ſhewn, or any part thereof, ſhould be ſubtracted out of the *Paris Burials* aforementioned, then our aſſertion will be ſtronger, and more proportionable to what follows concerning the Houſing of thoſe Cities, *viz.*

5. There were burnt in *London*, *Anno* 1666, above Thirteen thouſand Houſes, which being but a fifth part of the whole, the whole number of Houſes in the ſaid year, were above Sixty five thouſand; and whereas the ordinary *Burials* of *London* have increaſed between the years 1666 and 1686, above *one third*, the total of the Houſes at *London*, *Anno* 1686, muſt be about Eighty ſeven thouſand, which *Anno* 1682, appeared by accompt to have been Eighty four thouſand.

6. *Monſieur Morery*, the great *French* Author of the late *Geographical Dictionaries*, who makes *Paris* the greateſt City in the *World*, doth reckon but Fifty thouſand Houſes in the ſame, and other Authors and knowing Men much leſs; nor are there full Seven thouſand Houſes in the City of *Dublin*; ſo as if the Fifty

thouſand Houſes of *Paris*, and the Seven thouſand Houſes in the City of *Dublin* were added together, the total is but Fifty ſeven thouſand Houſes, whereas thoſe of *London* are Eighty ſeven thouſand as aforeſaid, or as Six to Nine.

7. As for the Shipping and Foreign Commerce of *London*, the common ſenſe of all Men doth judge it to be far greater than that of *Paris* and *Rouen* put together.

8. As to the Wealth and Gain accruing to the Inhabitants of *London* and *Paris* by Law Suits (or *La Chicane*) I only ſay, that the Courts of *London* extend to all *England* and *Wales*, and affect ſeven Millions of People, whereas thoſe of *Paris* do not extend near ſo far; Moreover there is no palpable conſpicuous argument at *Paris* for the Number and Wealth of Lawyers, like the Buildings and Chambers in the *Two Temples*, *Lincoln's-Inn*, *Gray's-Inn*, *Doctors-Commons*, and the Seven other Inns in which are Chimnies, which are to be ſeen at *London*, beſides many Lodgings, Halls and Offices relating to the ſame.

9. As to the plentiful and eaſie living of the People; we ſay,

1. That

1. That the People of *Paris* to thoſe of *London*, being as about Six to Seven, and the Houſing of the ſame as about Six to Nine, we infer, that the People do not live at *London* ſo cloſe and crouded as at *Paris*, but can afford themſelves more room and liberty.

2. That at *London* the *Hoſpitals* are better and more deſirable than thoſe of *Paris*; for that in the beſt at *Paris* there die Two out of Fifteen, whereas at *London* there die out of the worſt ſcarce Two of Sixteen, and yet but a fiftieth part of the whole die out of the *Hoſpitals* at *London*, and two fifths, or twenty times that proportion die out of the *Paris-Hoſpitals*, which are of the ſame kind; that is to ſay, the number of thoſe at *London* who chuſe to lie ſick in *Hoſpitals* rather than in their own Houſes, are to the like People of *Paris* as One to Twenty; which ſhews the greater Poverty or want of Means in the People of *Paris* than thoſe of *London*.

3. We infer from the premiſes, *viz.* the dying ſcarce Two out of Sixteen out of the *London Hoſpitals*, and about Two of Fifteen in the beſt of *Paris*, (to ſay nothing of *L' hoſtel Dieu*) that either the *Phyſicians* and *Chirurgeons* of *London* are

better than those of *Paris*, or that the Air of *London* is more wholesome.

10. As for the other great Cities of the *World*, if *Paris* were the greatest, we need say no more in behalf of *London*. As for *Pequin* in *China*, we have no account fit to reason upon; nor is there any thing in the Description of the two late Voyages of the *Chinese* Emperor from that City into East and West *Tartary*, in the years 1682 and 1683, which can make us recant what we have said concerning *London*. As for *Dely* and *Agra* belonging to the *Mogul*, we find nothing against our Position, but much to shew the vast numbers which attend that Emperor in his business and pleasures.

11. We shall conclude with *Constantinople* and *Gran Cairo*; as for *Constantinople* it hath been said by one who endeavour'd to shew the greatness of that City, and the greatness of the Plague which reigned in it, that there died One thousand five hundred *per diem*, without other Circumstances; To which we answer, that in the year 1665 there died in *London* One thousand two hundred *per diem*, and it hath been well proved, that the Plague of *London* never carried away above

above one fifth of the People, whereas it is commonly believed that in *Conſtantinople*, and other Eaſtern Cities, and even in *Italy* and *Spain*, that the Plague takes away two fifths, one half or more; wherefore where One thouſand two hundred is but one fifth of the People, it is probable that the number was greater than where One thouſand five hundred was two fifths, or one half, *&c.*

12. As for *Gran Cairo* it is reported, that Seventy three thouſand died in ten weeks or One thouſand *per diem*; where note, that at *Gran Cairo* the Plague comes and goes away ſuddenly, and that the Plague takes away Two or three fifth parts of the People as aforeſaid; ſo as Seventy three thouſand was probably the number of thoſe that died of the Plague in one whole year at *Gran Cairo*, whereas at *London Anno* 1665, Ninety ſeven thouſand were brought to account to have died in that year. Wherefore it is certain, that that City wherein Ninety Seven thouſand was but one fifth of the People, the number was greater than where Seventy three thouſand was two fifths or the half.

We

We therefore conclude, that *London* hath more People, Houſing, Shipping and Wealth, than *Paris* and *Rouen* put together; and for ought yet appears, is more conſiderable than any other City in the Univerſe, which was propounded to be proved.

A N

AN

ESSAY

IN

Political ARITHMETICK,

BY

Sir *WILLIAM PETTY*,

Tending to prove that in the Hoſpital called *L' hoſtel Dieu* at *Paris*, there die above Three thouſand *per Annum* by reaſon of ill accommodation.

1. IT appears that *Anno* 1678. there entred into the Hoſpital of *La Charité* Two thouſand ſix hundred forty and ſeven Souls, of which there died there within the ſaid year Three hundred thirty and eight, which is above an eighth part of the ſaid Two thouſand ſix hundred

dred forty and ſeven, and that in the ſame year there entred into *L' hoſtel Dieu* Twenty one thouſand four hundred ninety and one, and that there died out of that number Five thouſand ſix hundred and thirty, which is above *one quarter*; ſo as about half the ſaid Five thouſand ſix hundred and thirty, being Two thouſand eight hundred and fifteen, ſeem to have died for want of as good uſage and accommodation as might have been had at *La Charité*.

2. Moreover in the year 1679 there entred into *La Charité* Three thouſand one hundred and eighteen, of which there died Four hundred fifty and two, which is above a ſeventh part; and in the ſame year there entred into *L' hoſtel Dieu* Twenty eight thouſand ſix hundred thirty and five, of which there died Eight thouſand three hundred ninety and ſeven: and in both the ſaid years 1678 and 1679 (being very different in their degrees of Mortality) there entred into *L' hoſtel Dieu* Twenty eight thouſand ſix hundred thirty and five, and Twenty one thouſand four hundred ninety and one, in all Fifty thouſand one hundred twenty and ſix, the Medium whereof is Twenty five thouſand

ſand ſixty and three, and there died out of the ſame in the ſaid two years Five thouſand ſix hundred and thirty, and eight thouſand three hundred ninety and ſeven, in all Fourteen thouſand twenty and ſeven, the Medium whereof is Seven thouſand and thirteen.

3. There entred in the ſaid years into *La Charité* Two thouſand ſix hundred forty and ſeven, and Three thouſand one hundred and eighteen, in all Five thouſand ſeven hundred ſixty and five, the Medium whereof is Two thouſand eight hundred eighty and two, wherefore there died Three hundred thirty and eight, and Four hundred fifty and two, in all Seven hundred ninety, the Medium whereof is Three hundred ninety and five.

4. Now if there died out of *L' hoſtel Dieu* Seven thouſand and thirteen *per annum*, and that the proportion of thoſe that died out of *L' hoſtel Dieu* is double to thoſe that died out of *La Charité* (as by the above Numbers it appears to be near thereabouts) then it follows, that half the ſaid Numbers of Seven thouſand and thirteen, being Three thouſand five hundred and ſix, did not die by *natural neceſſity*, but by the evil Adminiſtration of that Hoſpital. 5. This

5. This Concluſion ſeem'd at the firſt ſight very ſtrange, and rather to be ſome miſtake or chance than a ſolid and real truth; but conſidering the ſame matter as it appeared at *London*, we were more reconciled to the belief of it, *viz.*

1. In the Hoſpital of St. *Bartholomew* in *London* there was ſent out and *cured* in the year 1685, 1764 Perſons, and there *died* out of the ſaid Hoſpital Two hundred fifty and two. Moreover there were ſent out and *cured* out of St. *Thomas*'s Hoſpital One thouſand five hundred twenty and three, and *buried* Two hundred and nine, that is to ſay, there were cur'd in both Hoſpitals Three thouſand two hundred eighty and ſeven, and buried out of both Hoſpitals Four hundred ſixty and one, and conſequently cured and buried Three thouſand ſeven hundred and forty and eight, of which number the Four hundred ſixty and one buried is leſs than an *eighth part*, whereas at *La Charité* the part that died was more than an *eighth part*, which ſhews that out of the moſt poor and wretched Hoſpitals of *London* there died fewer in proportion than out of the beſt in *Paris*.

2. Far-

2. Farthermore, it hath been above ſhewn that there died out of *La Charité* at a Medium Three hundred ninety and five *per annum*, and One hundred forty and one out of *Les Incurables*, making in all Five hundred thirty and ſix; and that out of St. *Bartholomew*'s and St. *Thomas*'s Hoſpitals, *London*, there died at a Medium but Four hundred ſixty and one, of which *Les Incurables* are part; which ſhews, that although there be more People in *London* than in *Paris*, yet there went at *London* not ſo many People to Hoſpitals as there did at *Paris*, although the pooreſt Hoſpitals at *London*, were better than the beſt at *Paris*; which ſhews that the pooreſt People at *London* have better accommodation in their own Houſes, than the beſt Hoſpital of *Paris* affordeth.

6. Having proved that there die about Three thouſand five hundred and ſix Perſons at *Paris unneceſſarily* to the damage of *France*, we come next to compute the value of the ſaid damage, and of the Remedy thereof, as follows, *viz.* the value of the ſaid Three thouſand five hundred and ſix Perſons at 60 *l. Sterl. per* Head, being about the value of *Argier Slaves*, (which is leſs than the intrinſick value of People at *Paris*)

ris) the whole loſs of the Subjects of *France* in that Hoſpital ſeems to be ſixty times 3506 *li. Sterl. per Annum*, *viz.* 210360 *li. Sterl.* equivalent to about 2524320 *French Livers.*

7. It hath appeared that there came into *L' hoſtel Dieu* at a Medium Twenty five thouſand ſixty and three *per Annum*, or Two thouſand eighty and nine *per Menſem*, and that the whole ſtock of what remain'd in the precedent Months is, at a Medium, about Two thouſand one hundred and eight (as may appear by the third Line of the Table N° 5, which ſhall be ſhortly publiſhed) *viz.* the Medium of Months is Two thouſand four hundred and ten for the ſickly year 1679, whereunto One thouſand eight hundred and ſix, being added as the Medium of Months for the year 1678 makes Four thouſand two hundred and ſixteen, the Medium whereof is the Two thouſand one hundred and eight above mentioned; which number being added to the Two thouſand eighty and nine which entred each Month, makes Four thouſand one hundred ninety and ſeven for the Number of Sick which are ſuppoſed to be always in *L' hoſtel Dieu* one time with another.

8. Now

8. Now if ſixty *French Livres per Annum* for each of the ſaid Four thouſand one hundred ninety and ſeven ſick Perſons, were added to the preſent ordinary Expence of that Hoſpital (amounting to an addition of Two hundred fifty one thouſand eight hundred and twenty *Livres*) it ſeems that ſo many lives might be ſaved as are worth above ten times that ſum, and this by doing a manifeſt deed of Charity to Mankind.

Memorandum, *That* Anno 1685. *the Burials of* London *were Twenty three thouſand two hundred twenty and two, and thoſe of* Amſterdam *Six thouſand two hundred forty and five; from whence, and the difference of Air, 'tis probable that the People of* London *are quadruple to thoſe of* Amſterdam.

FINIS.

OBSERVATIONS UPON THE CITIES OF LONDON AND ROME.

By Sir WILLIAM PETTY, late Fellow of the *Royal-Society.*

The Second Edition Corrected.

LONDON, Printed for *Robert Clavel* at the *Peacock*, and *Henry Mortlock* at the *Phœnix* in St. *Paul's Church-Yard*, 1699.

OBSERVATIONS UPON THE CITIES OF *LONDON* and *ROME*.

1. THAT before the Year 1630, the Chriſtnings at *London* exceeded the Burials of the ſame; but about the Year 1655, they were ſcarce Half; and now about Two Thirds.

2. Before the Reſtauration of Monarchy in *England*, *Anno* 1660, the People of *Paris* were more than thoſe of *London* and *Dublin* put together, whereas now, the People of *London* are more than

thoſe of *Paris* and *Rome*, or of *Paris* and *Rouen*.

3. *Anno* 1665, One Fifth Part of the then People of *London*, or Ninety Seven Thouſand died of the Plague, and in the next Year, 1666, Thirteen Thouſand Houſes, or One Fifth part of all the Houſing of *London* were burnt alſo.

4. At the Birth of *Chriſt*, Old *Rome* was the greateſt City of the World, and *London* the greateſt at the Coronation of King *James* the Second, and near Six times as great as the preſent *Rome*, wherein are One Hundred and Nineteen Thouſand Souls, beſides *Jews*.

5. In the Years of King *Charles* the Scond his Death, and King *James* the Second his Coronation (which were neither of them remarkable for extraordinary Sicklineſs or Healthfulneſs) the Burials did wonderfully agree, *viz.* *Anno* 1684, they were Twenty Three Thouſand Two Hundred and Two, and *Anno* 1685, they were Twenty Three Thouſand Two Hundred and Twenty Two, the *Medium* whereof is Twenty Three Thouſand Two Hundred and Twelve. And the Chriſtnings did very wonderfully agree alſo, having been *Anno* 1684,

Fourteen

Fourteen Thouſand Seven Hundred and Two, and *Anno* 1685, Fourteen Thouſand Seven Hundred and Thirty Two, the *Medium* whereof is Fourteen Thouſand Seven Hundred and Sixteen, which conſiſtence was never ſeen before; the ſaid Number of Twenty Three Thouſand Two Hundred and Twelve Burials making the People of *London* to be Six Hundred Ninety Six Thouſand Three Hundred and Sixty, at the rate of One dying *per Annum* out of Thirty.

6. Since the great Fire of *London*, *Anno* 1666, about Seven Parts of Fifteen of the preſent vaſt City hath been new built, and is with its People increaſed near One Half, and become equal to *Paris* and *Rome* put together, the one being the Seat of the great *French* Monarchy, and the other of the Papacy.

F I N I S.

CINQ ESSAYS

SUR

L'Arithmetique Politique.

I. *On Répond aux Objections tirées de la Ville de* Rey *en* Perſe, *& à celles de Mr.* Auzout *contre les deux premiers Eſſays, & l'on fait voir qu'il-y-a autant de monde à* Londres *qu'à* Paris, Rome *&* Rouen *pris enſemble.*

II. *Comparaiſon entre* Londres *&* Paris *en* 14 *choſes particuliers.*

III. *Preuves qu'il demeure dans les* 134 *paroiſſes de* Londres *marquées dans les billets de mortalité, environ* 696 *mille perſonnes.*

IV. *Combien l'on eſtime qu'il-y-a de monde à* Londres, Paris, Amſterdam, Venice, Rome, Dublin, Briſtol *&* Rouen, *avec pluſieurs remarques ſur ce ſujet.*

V. *Touchant la* Hollande *& les autres VII* Provinces Unies.

Par le Chevalier *PETTY* de la Societé Royale.

Invidiam augendo ulciſcar.

A *LONDRE*,
Imprimé pour *R. Clavel* & *H. Mortlock.* 1699.

FIVE ESSAYS IN *Political Arithmetick.*

VIZ.

I. Objections from the City of *Rey* in *Perſia*, and from Monſ. *Auzout*, againſt Two former Eſſays, anſwered, and that *London* hath as many People as *Paris*, *Rome* and *Rouen* put together.

II. A Compariſon between *London* and *Paris* in 14 Particulars

III. Proofs that at *London*, within its 134 Pariſhes named in the Bills of Mortality, there live about 696 Thouſand People.

IV. An Eſtimate of the People in *London*, *Paris*, *Amſterdam*, *Venice*, *Rome*, *Dublin*, *Briſtol* and *Rouen*, with ſeveral Obſervations upon the ſame.

V. Concerning *Holland* and the reſt of the Seven *United Provinces*.

By Sir *WILLIAM PETTI*, late Fellow of the *Royal-Society*.

Invidiam augendo ulciſcar.

LONDON, Printed for *Robert Clavel* and *Henry Mortlock*, 1699.

Au ROY.

SIRE,

VOstre Majesté ayant bien voulu recevoir favorablement mes deux derniers Essays sur les Villes & Hopitaux de Londres *& de* Paris, *& mes Observations sur* Rome *&* Rouen, *je prens la liberté (apres avoir attendu pendant six mois ce que pourroient dire les scavants de* L'Europe *contre ce que j'y avance) de*

TO THE

KING'S

Moſt Excellent MAJESTY.

SIR,

YOur Majeſty having Graciouſly accepted my two late Eſſays, about the Cities and Hoſpitals of *London* and *Paris*, as alſo my Obſervations on *Rome* and *Rouen*; I do (after ſix Months waiting for what may be ſaid againſt my ſeveral Doctrines, by the able Men of *Europe*) humbly

de luy preſenter quelques autres écrits ſur ce méme ſujet pour confirmer, éclaircir, & étendre, les premiers, croiant loüer beaucoup mieux voſtre Majeſté par ces ſortes d'argumens réels, que par les diſcours les plus étudiez & les éloges les plus éclatans que pourroit imaginer celuy qui eſt

De voſtre Majeſté

Le tres-humble, tres-fidéle

& tres-obéïſſant Sujet,

PETTY.

---

humbly preſent Your Majeſty with a few other Papers upon the ſame Subject, to ſtrengthen, explain and enlarge the former; hoping by ſuch real Arguments, better to praiſe and magnifie Your Majeſty, than by any other the moſt ſpecious Words and Elogies that can be imagined by

Your Majeſty's

Moſt humble, loyal,

and obedient Subject,

William Petty.

PREMIER ESSAY.

ON devoit bien s'attendre qu'une aſſertion que *Londres* eſt plus grand que *Paris* & *Rouen*, ou que *Paris* & *Roms* pris enſemble, ou méme plus qu' aucune ville du monde, ne manqueroit pas d'eſtre contredite, & l'on a dû s'attendre auſſi que (ſi je continuois dans le méme ſentiment,) je ne manquerois pas de répliquer à ces contradictions. Dans ce deſſein,

Je commence par l'ingenieux Auteur de la Republique des Lettres, qui dit que *Rey* en *Perſe* eſt beaucoup plus grand que *Londres*, parce que dans la 6 centurie du Chriſtianiſme (je ſuppoſe l'an 550, le milieu de ce ſiécle) il y avoit 15000, ou plûtoſt 44000 moſquées ou temples Mahometans ; à quoy je répons que ce ne peut eſtre qu'une raillerie de l'auteur, puiſque

The FIRST ESSAY.

IT could not be expected that an assertion of London's *being bigger than* Paris *and* Rouen, *or than* Paris *and* Rome *put together, and bigger than any City of the World, should scape uncontradicted; and 'tis also expected, that I (if continuing in the same perſuaſion) ſhould make ſome reply to thoſe Contradictions. In order whereunto,*

I begin with the ingenious Author of the Republique des Lettres, *who ſaith that* Rey *in* Perſia *is far bigger than* London, *for that in the ſixth Century of Chriſtianity (I ſuppoſe* Anno 550, *the middle of that Century) it had* 15 *Thouſand, or rather* 44 *Thouſand Moſchees, or Mahometan Temples; to which I reply, that I hope this Objector is but in jeſt, for*

puiſque *Mahomet* n'eſt venu au monde que vers l'an 570 & n'a eu des moſquées qu'environ 50 ans apres.

Enſuite je repons aux lettres que l'excellent Mr. *Auzout* écrit de *Rome*. Lequel veut bien demeurer d'accord que *Londres*, *Weſtminſter* & *Southwark*, ont autant d'habitans qu'il 'y en a dans *Paris* & ſes fauxbourgs, & ne nie que foiblement qu'il ne puiſſe y avoir preſqu'autant de monde dans tout ce qu'il-y-a de maiſons compriſes dans les billets de mortalité qu'a *Paris* & a *Rouen*, mais il dit que pluſieurs paroiſſes inſerées dans ces billets, ſont aſſés eloignées de *Londres*, & n'y ſont pas contigues, & que c'eſt ainſi que l'entend *Grant*.

A quoy (comme eſtant ſa capitale, pour ne pas dire ſa ſeule objection) nous répondons, 1. Qu'il paroit par le livre de *Grant* que les billets de *Londres* ont toujours eſté depuis l'an 1636. comme ils ſont maintenant. 2. Que depuis environ 50 ans, 3 ou 4 paroiſſes qui eſtoient autrefois un peu éloignées, ont eſté jointes par le moyen des batimens qui ont eſté faits entre deux aut corps de la ville & c'eſt ce qui les a fait inſerer dans les billets. 3. Que depuis 50 ans le total des

batimens

for that Mahomet *was not born till about the year* 570, *and had no Moſchees till about* 50 *years after.*

In the next place I reply to the excellent Monſieur Auzout's *Letters from* Rome, *who is content that* London, Weſtminſter *and* Southwark, *may have as many People as* Paris *and its Suburbs; and but faintly denieth, that all the Houſing within the Bills, may have almoſt as many People as* Paris *and* Rouen, *but ſaith that ſeveral Pariſhes inſerted into theſe Bills, are diſtant from, and not contiguous with* London, *and that* Grant *ſo underſtood it.*

To which (as his main, if not his only Objection) we anſwer: 1. *That the* London *Bills appear in* Grant's *Book, to have been always ſince the Year One Thouſand Six Hundred Thirty Six, as they now are.* 2. *That about Fifty Years ſince, Three or Four Pariſhes, formerly ſomewhat diſtant were joyned by interpoſed Buildings, to the Bulk of the City, and therefore then inſerted into the Bills.* 3. *That ſince Fifty Years, the whole*

batimens eſtant augmenté au double à achevé cette union de belle maniere qu'il n'y à maintenant aucune des maiſons compriſes dans ces billets qui ne ſoit à la portée de la voix d'une autre maiſon. 4. Tout cecy eſt confirmé par l'authorité du Roy & de la ville & une coutume de 50 ans. 5. Qu'il n'y à que 3 paroiſſes pour leſquelles on puiſſe former cette difficulté avec quelque ſorte de couleur, ce qui fait à peine $\frac{1}{51}$ partie du tout.

Sur le tout, à la premiere lecture de cette lettre ſortample de Mr. *Auzout*, datée de *Rome* du 19 *Nov.* 1686, je fis des remarques ſur chaque paragraphe, mais je les ay ſupprimeés, parce que cela paroiſſoit comme une eſpece de guerre avec une perſonne de merite, avec qui je n'en voulois point avoir, quoy que ce ne fut dans le fonds qu'un éclairciſſement de quelques doutes, & j'ay choiſi un moyen plus court & plus doux pour répondre à Mr. *Auzout* comme nous allons faire.

Du

Buildings being more than double; have perfected that Union, ſo as there is no Houſe within the ſaid Bills, from which one may not call to ſome other Houſe. 4. *All this is confirmed by Authority of the King and City, and the Cuſtom of Fifty Years.* 5. *That there are but Three Pariſhes under any colour of this Exception, which are ſcarce* $\frac{1}{32}$ *part of the whole.*

Upon the whole matter, upon ſight of Monſieur Auzout's *large Letter, dated the* 19th. *of* November *from* Rome, *I made Remarks upon every Paragraph thereof; but ſuppreſſing it (becauſe it lookt like a War againſt a worthy Perſon with whom I intended none, whereas in truth, it was but a reconciling explication of ſome doubts) I have choſen the ſhorter and ſofter way of anſwering Monſieur* Auzout *as followeth,* viz.

Du nombre des habitans de Londres, *comme auſſi de ceux de* Paris, Rouen *&* Rome.

Mr. *Auzout* cite un regiſtre authentique qui porte qu'il-y-a 23223 maiſons dans *Paris* ou il demeure plus de 80 mille familles, ainſi ſuppoſant qu'il demeure dans chacune de ces maiſons 3 ½ familles l'une portant l'autre, le nombre des familles ſera 81280, & Mr. *Auzout* mettant 6 têtes par famille, le plus grand nombre ou l'on puiſſe faire monter les habitans de *Paris* ſelon ſon opinion ſera	487, 680

Mr.

Concerning the Number of People in *London*, as alſo in *Paris*, *Rouen* and *Rome*, viz.

Monſieur Auzout *alledgeth an authentick Account, that there are* 23223 *Houſes in* Paris, *wherein do live about Eighty Thouſand Families, and therefore ſuppoſing* 3 ½ *Families to live in every of the ſaid Houſes, one with another, the number of Families will be* 81280; *and Monſ.* Auzout *alſo allowing Six Heads to each Family, the utmoſt number of People in* Paris *according to that Opinion will be*	487, 680

Mr. *Auzout* ne nie pas que le medium des enterremens de *Paris* ne ſoit 19887 ; ny qu'il n'en meure 3506 ſans neceſſité à L'Hotel-Dieu, ainſi en déduiſant ce dernier nombre du premier la meilleure regle pour les enterremens de *Paris* ſera 16381, tellement que le nombre des habitans, ſuppoſant qu'il n'en meurt qu'un de 30 (ce qui eſt plus avantageux pour *Paris* que l'opinion de Mr. *Auzout* qu'il en meurt un de 25) le nombre des habitans de *Paris* ſera 491, 430, plus qu'il ne s'en trouve par le dernier conte rapporté par Mr. *Auzout* méme. } 491, 430

Le medium de ces 2 contes *Paris* eſt } 488, 055

Le

The Medium of the Paris *Burials was not denied by Monſieur* Auzout *to be Nineteen Thouſand Eight Hundred and Eighty Seven, nor that there died Three Thouſand Five Hundred and Six unneceſſarily out of* L'Hotel-Dieu; *wherefore deducting the ſaid laſt Number out of the former, the neat ſtandard for Burials at* Paris, *will be Sixteen Thouſand Three Hundred and Eighty One, ſo as the number of People there, allowing but One to die out of Thirty (which is more advantageous to* Paris *than Monſieur* Auzout's *Opinion of One to die out of Twenty Five) the number of People at* Paris *will be* 491, 430, *more than by Monſieur* Auzout's *own laſt mentioned Account.* } 491, 430

And the Medium of the ſaid two Paris *Accounts is* } 488, 055

Le medium des enterrements de *Londres* eſt réelement 23212, qui eſtant multipliez par 30 (comme on à fait pour *Paris*) le nombre des habitans ſera } 596,360

Il paroit par le regiſtres des maiſons de *Londres* qu'il y en à 105315; à quoy ajoutant $\frac{1}{10}$ partie de ce méme nombre, comme le moindre nombre de familles doubles que l'on puiſſe ſuppoſer qu'il-y-a à *Londres*, le total des familles ſera 115840; & en mettant 6 perſonnes pour chaque famille comme on fait pour *Paris*, le total des habitans de *Londres* ſera } 695,076

Le medium de ces 2 derniers contes de *Londres* eſt } 695,718

Telle-

The Medium of the London *Burials is really* 23212, *which multiplied by Thirty (as hath been done for* Paris*) the number of the People there will be*	696, 360
The Number of Houſes at London *appears by the Regiſter to be* 105, 315, *whereunto adding* $\frac{1}{10}$ *part of the ſame, or* 10331, *as the leaſt Number of double Families that can be ſuppoſed in* London, *the total of Families will be* 115, 840; *and allowing ſix Heads for each Family as was done for* Paris, *the total of the People at* London *will be*	695, 076
The Medium of the two laſt London *Accounts is*	695, 718

So

Tellement que le nombre des habitans de *Paris* ſuivant le conte cy deſſus eſt	488,055	
De *Rouen* ſuivant le plus que Mr. *Auzout* y en mette	80,000	693,055
De *Rome* ſelon ce qu'il en rapporte luy méme dans ſa lettre precedente	25,000	
Si bien qu'il-y-à plus de monde a *Londres* qu'a *Paris*, *Rouen* & *Rome* de		2,663
Il faut obſerver que les paroiſſes de *Iſlington*, *Newington* & *Hackney*, qui ſont les ſeules que l'on pourroit pretendre avec quelque ſorte de couleur n'eſtre pas contigues, ne		114,284

ſont

So as the People of Paris *according to the above account is*	488,055	
Of Rouen *according to Monsieur* Auzout's *utmost demands*	80,000	693,055
Of Rome *according to his own report thereof in a former Letter,*	25,000	
So as there are more People at London *than at* Paris, Rouen *and* Rome *by*		2,663
Memorandum, *That the Parishes of* Islington, Newington *and* Hackney, *for which only there is any colour of Non-contiguity, is*		114,284

not

font pas $\frac{1}{12}$ partie de ce qui eſt compris dans les billets de mortalité, & que par conſequent il-y-a encore ſans ces 3 paroiſſes plus de monde à *Londres* qu'à *Paris* & à *Rouen* pris enſemble de	114, 284

Le quel nombre de 114, 284 eſt probablement plus qu'aucune autre ville de *France* ne contient de monde.

SECOND

not $\frac{1}{33}$ *part of what is contained in the Bills of Mortality, and consequently* London, *without the said Three Parishes, hath more People than* Paris *and* Rouen *put together by*	114, 284

Which Number of 114, 284 *is probably more People than any other City of* France *contains.*

The

SECOND ESSAY.

POur ce qui eſt des autres comparaiſons de *Londres* avec *Paris*, nous repetons encor & nous étendons ce qui à eſté dit autrefois ſur ce ſujet de la maniere qui ſuit,

1. Qu'il en meurt 40 de cent dans les hopitaux de *Paris*, ou il en meurt un ſi grand nombre ſans neceſſité, & à peine $\frac{1}{20}$ de la méme proportion dans les hopitaux de *Londres* que l'on a fait voir eſtre meilleurs que le meilleur de *Paris*.

2. Qu'il-y-a à *Paris* 81280 familles ou cuiſines dans moins de 24000 maiſons ou portes ſur la rue, ce qui rend leur maniere de vivre moins propre & moins commode qu'a *Londres*.

3. Lá ou le nombre des batémes approche fort ou va méme au de la des enterremens, le monde y eſt plus pauvre n'ayant que peu de ſerviteurs & qu'un petit equipage.

4. La

The SECOND ESSAY.

AS *for other Comparisons of* London *with* Paris, *we farther repeat and enlarge what hath been formerly said upon those matters as followeth,* viz.

1. *That Forty* per Cent. *die out of the Hospitals at* Paris *where so many die unnecessarily, and scarce* $\frac{1}{20}$ *of that proportion out of the Hospitals of* London, *which have been shewn to be better than the best of* Paris.

2. *That at* Paris 81280 *Kitchins, are within less than* 24000 *Street-doors, which makes a less cleanly and convenient way of living than at* London.

3. *Where the Number of Christnings are near unto, or exceed the Burials, the People are poorer, having few Servants and little Equipage.*

4. *The*

4. La riviére de la *Tamiſe* eſt plus agreable & plus navigable que la *Seine* ſes eaües ſont meilleures & plus ſaines & le pont de *Londres* eſt le plus conſiderable de toute l'*Europe*.

5. Les vaiſſeaux & le commerce étranger de *Londres*, ſont incomparablement plus grands qu'à *Paris* & à *Rouen*.

6. Les chambres des gens de Loy à *Londres* contiennent 2772 cheminées & valent 240 mille livres ſterlin ou 3 millions de livres de *France*, outre les logements de leurs familles en d'autres lieux.

7. L'air y eſt plus ſain, car à *Londres* à peine en meurt il 2 de 16 dans les plus méchants hopiteaux, au lieu qu'à *Paris* il en meurt 2 de 15 dans les meilleurs, de plus les enterremens de *Paris* ſont $\frac{1}{3}$ partie au deſſus & au deſſous du medium, au lieu qu'à *Londres* ce n'eſt pas plus de $\frac{1}{11}$, d'ou il s'enſuit que l'air eſt bien moins temperé à *Paris* qu'à *Londres*.

8. Le chauffage y eſt à meilleur marché & tient moins de place, Le charbon eſtant un bitume ſulfuré qui eſt aſſes ſain.

9. Les vivres les plus neceſſaires & les poiſſons y ſont auſſi à meilleur marché & on y trouve de toutes ſortes de boiſſons en plus grande abondance qu'en aucun autre lieu.

10. Pour

4. *The River of* Thames *is more pleasant and navigable than the* Seine, *and its Waters better and more wholesome; and the Bridge of* London, *is the most considerable of all* Europe.

5. *The Shipping and Foreign Trade of* London *is incomparably greater than that at* Paris *and* Rouen.

6. *The Lawyers Chambers at* London *have 2772 Chimnies in them, and are worth 140 Thousand Pounds sterling, or Three Millions of* French *Livres, besides the dwellings of their Families elsewhere.*

7. *The Air is more wholesome, for that at* London *scarce Two of Sixteen die out of the worst Hospitals, but at* Paris *above Two of Fifteen out of the best. Moreover, the Burials of* Paris *are* $\frac{1}{3}$ *part above and below the Medium, but at* London, *not above* $\frac{1}{18}$, *so as the* intemperies *of the Air at* Paris *is far greater than at* London.

8. *The Fuel cheaper, and lies in less room, the Coals being an wholesome sulphurous Bitumen.*

9. *All the most necessary sorts of Victuals, and of Fish, are cheaper, and Drinks of all sorts in greater variety and plenty.*

10. Pour ce qui eſt des égliſes, nous en rapportons au jugement des yeux de chacun, croiant qu'il n'y-a rien à *Paris* de ſi grand qu'eſtoit & que ſera St. *Paul*, ny de ſi beau que la chapelle de *Henry* VII.

11. D'un autre coté il eſt probable qu'il-y-a plus d'argent à *Paris* qu'à *Londres*, ſi l'on y trouve le revenu public qui pour en parler groſſierement, eſt quatre fois plus grand que celui d'*Angleterre*.

12. *Paris* n'a pas eſté ſi fort incommodé de la peſte que *Londres* ces 50 dernieres années. Cependant la peſte (qui a recommencé 5 fois à *Londres* entre les années 1591 & 1666, c'eſt à dire tous les 15 ans dans un medium & qui a chaque fois emporté $\frac{1}{5}$ des habitans, n'y-a point eſté conue pendant les 21 ans derniers paſſez, & l'on croit avoir trouvé un moyen viſible, avec l'aſſiſtance ordinaire de Dieu, de la diminuer des $\frac{2}{3}$ la premiere fois qu'elle reviendra.

13. Quand au terrain ſur lequel *Paris* eſt bati par rapport à *Londres*, nous diſons que ſi les maiſons de *Paris* ſont à 5 étages contre celles de *Londres* à 4 ou à ſemblable proportion, les 82 mille familles de *Paris* ſont donc ſur un terrain equivalent à 65 mille

aſſiétes

16. *The Churches of* London *we leave to be judg'd by thinking that nothing at* Paris *is ſo great as St.* Paul's *was, and is like to be, nor ſo beautiful as* Henry *the Seventh's Chappel.*

11. *On the other hand, 'tis probable, that there is more Money in* Paris *than* London, *if the publick Revenue (groſly ſpeaking, quadruple to that of* England) *be lodged there.*

12. Paris *hath not been for theſe laſt Fifty Years ſo much infeſted with the Plague as* London; *now that at* London *the Plague (which between the Year* 1591 *and* 1666, *made Five returns, viz. every Fifteen Years, at a Medium, and at each time carried away* $\frac{1}{3}$ *of the People) hath not been known for the One and Twenty Years laſt paſt; and there is a viſible way by God's ordinary Bleſſing to leſſen the ſame by* $\frac{1}{3}$ *when it next appeareth.*

13. *As to the Ground upon which* Paris *ſtands in reſpect of* London, *we ſay, that if there be five Stories or Floors of Houſing at* Paris, *for Four at* London, *or in that proportion, then the Eighty Two Thouſand Families of* Paris *ſtand upon the equivalent of Sixty Five Thouſand* London

assiétes de maisons de *Londres*; & s'il ya 115 mille familles à *Londres* & seulement 82 mille à *Paris*, la proportion du terrain de *Londres* à celuy de *Paris* est comme 115 à 65, ou comme 23 à 13.

14. De plus on dit que *Paris* est un ovale long de 3 milles d'*Angleterre* & large de 2½ dont le plan ne contient que 5 miles & demy quarrez; aulieu que *Londres* a 7 miles de long & 1¾ de large dans un medium, ce qui fait un plan de pres de 9 miles quarrez, laquelle proportion de 5½ à 9 est peu differente de celle de 13 à 23.

15. Il est à remarquer qu'au temps de *Neron* (comme le rapporte Mr. *Chevreau*) il mourut dans la vieille *Rome* 300 mille personnes de la peste, que s'il y en mourut alors 3 de 10, à cause que le pays est plus chaud, comme il en meurt à *Londres* 2 de 10, le nombre des habitans n'estoit en ce temps la qu'un million, aulieu qu'à *Londres* il y en à present environ 700 mille, de plus le terrain enfermé dans les murailles de la vieille *Rome* n'estoit qu'une cercle de 3 miles de diametre, dont le plan est environ 7 miles quarrez & les fauxbourgs à peine une fois autant, en tout environ 13 miles quarrez, aulieu que ce qu'il-y-à de

terrain

don *Houſteds, and if there be* 115 *Thouſand Families at* London, *and but* 82 *Thouſand at* Paris, *then the proportion of the* London *Ground to that of* Paris *is as* 115 *to* 65, *or as* 23 *to* 13.

14. *Moreover* Paris *is ſaid to be an Oval of Three Engliſh Miles long, and Two and a half broad, the Area whereof contains but Five and a half ſquare Miles; but* London *is Seven Miles long, and One and a third broad at a Medium, which makes an Area of near Nine ſquare Miles, which proportion of Five and a half to Nine differs little from that of Thirteen to Twenty Three.*

15. Memorandum, *That in* Nero's *time, as Monſieur* Chevreau *reporteth, there died Three Hundred Thouſand People of the Plague in Old* Rome; *now if there died Three of Ten then, and there, being a hotter Country, as there dies Two of Ten at* London, *the number of People at that time, was but a Million, whereas at* London *they are now about Seven Hundred Thouſand. Moreover the Ground within the Walls of Old* Rome *was a Circle but of Three Miles diameter, whoſe Area is about Seven ſquare Miles, and the Suburbs ſcarce as much more, in all about Thirteen ſquare Miles, whereas the built*

terrain occupé par les batimens de *Londres* eſt environ 9 miles quarrez comme nous l'avons dit, & ces 2 ſortes de proportions s'accordant l'une avec l'autre il ſemble par conſequent que la vieille *Rome* n'eſtoit que de la moitié plus grande que *Londres* d'aujourdhuy ; ce que nous laiſſons à examiner aux antiquaires.

Ground at London *is about Nine ſquare Miles as aforeſaid; which two ſorts of proportions, agree with each other, and conſequently Old* Rome *ſeems but to have been half as big again as the preſent* London, *which we offer to Antiquaries.*

TROISIEME ESSAY.

PReuves que le nombre des habitans qui ſont dans les 134 paroiſſes compriſes dans les billets de mortalité de *Londres*, ſans rapport aux autres villes, eſt 696 *m.*

Je ne connois que trois manieres de le faire.

1. Par les maiſons, les familles, & les perſonnes qui les compoſent.

2. Par le nombre des enterrements dans les années qui ont eſté ſaines & par la proportion des vivants aux mourants.

3. Par le nombre de ceux qui meurent de la peſte dans les années de peſtilence, à proportion de ceux qui en échappent.

Premiere maniere.

Pour ſcavoir le nombre des maiſons je me ſuis ſervi de 3 methodes.

1. Du

The THIRD ESSAY.

PRoofs that the number of People in the 134 *Pariſhes of the* London *Bills of Mortality, without reference to other Cities, is about* 696 *thouſand,* viz.

I know but three ways of finding the ſame.

1. *By the Houſes, and Families and Heads living in each.*

2. *By the number of Burials in healthful times, and by the proportion of thoſe that live, to thoſe that die.*

3. *By the number of thoſe who die of the Plague in Peſtilential years, in proportion to thoſe that ſcape.*

The Firſt way

To know the number of Houſes I uſed three methods, viz.

1. *The*

1. Du nombre des maiſons qui furent brulées l'an 1666. qui fut, par le rapport authentique qui en a eſté fait, 13200, enſuite de la proportion de ceux qui ſont morts dans ces maiſons avec le tout, que je trouve n'avoir eſté l'année 1686 que $\frac{1}{7}$ partie aulieu que l'année 1666 ils faiſoient preſque $\frac{1}{5}$ d'ou j'infere que toutes les maiſons de *Londres* l'année 1666 étoient 66 mille, aupres quoy trouvant que les enterrements l'année 1666 eſtoient par rapport à ceux de 1686 comme 3 à 4, je m'arréte à 88 *m.* comme eſtant le nombre des maiſons l'an 1686.

2. Ceux qui ont eſté employez à faire la carte generale de *Londres* publiée l'année 1682, m'ont aſſuré que cette année là ils avoient trouvé qu'il y avoit à *Londres* plus de 84 *m.* maiſons, ainſi l'année 1686, ou en 4 années davantage il peut y avoir $\frac{1}{10}$ ou 8400 maiſons de plus (*Londres* croiſſant au double en 40 ans) tellement que l'année 1686 le tout peut eſtre 92400.

3. Je trouve que l'année 1685 il y avoit 29325 cheminées à *Dublin* & 6400 maiſons, & à *Londres* 388 *m.* cheminées & ſelon cette proportion il faudroit qu'il y eut 87 *m.* maiſons à *Londres*, d'alleurs j'ay

1. *The number of Houſes which were burnt* Anno 1666, *which by authentick Report was* 13200; *next, what proportion the People who dyed out of thoſe Houſes, bore to the whole; which I find* Anno 1686, *to be but* $\frac{1}{7}$ *part, but* Anno 1666 *to be almoſt* $\frac{1}{6}$, *from whence I infer the whole Houſing of* London, Anno 1666, *to have been* 66 *thouſand, then finding the Burials* Anno 1666 *to be to thoſe of* 1686 *as* 3 *to* 4, *I pitch upon* 88 *thouſand to be the number of Houſing* Anno 1686.

2. *Thoſe who have been employed in making the general Map of* London, *ſet forth in the year* 1682, *told me that in that year, they had found above* 84 *thouſand Houſes to be in* London, *wherefore* Anno 1686, *or in four years more, there might be* $\frac{1}{10}$ *or* 8400 *Houſes more* (London *doubling in* 40 *years*) *ſo as the whole,* Anno 1686 *might be* 92400.

3. *I found that* Anno 1685, *there were* 29325 *Hearths in* Dublin, *and* 6400 *Houſes, and in* London 388 *thouſand Hearths, whereby there muſt have been at that rate* 87000 *Houſes in* London. *Moreover I found*

j'ay trouvé qu'il y avoit à *Briſtol* cette méme année 16752 cheminées & 5307 maiſons & à *Londres* 388 *m* cheminées, comme nous venons de dire, & ſelon cette proportion il faudroit qu'il y eut à *Londres* 123 *m.* maiſons, & dans un medium entre ces 2 proportions de *Dublin* & de *Briſtol* 105 mille maiſons.

Enfin par un certificat du greſte des cheminées je trouve que les maiſons compriſes dans les billets de mortalité ſont 105315.

Apres avoir ainſi trouvé le nombre des maiſons, je viens au nombre des familles qui y demeurent, & d'abord j'ay penſé que s'il y avoit 3 ou 4 familles ou cuiſines dans chaque maiſon de *Paris*, il pourroit bien y avoir deux familles dans $\frac{1}{4}$ des maiſons de *Londres*, & en ſela le ſentiment commun de pluſieurs de mes amis ſe trouve conforme à mes conjectures particulieres pour cette ſuppoſition.

Quant au nombre des têtes pour chaque familles je m'attache à l'obſervation de *Grant* dans la p. de ſa 5 edition, que dans les familles de gens de metier de *Londres* il-y-a 8 tetes l'une portant l'autre, dans les familles d'un rang plus élevé, plus de 10, & dans les plus pauvres plus de

I found that in Briſtol *there were in the ſame year* 16752 *Hearths, and* 5307 *Houſes, and in* London 388 *thouſand Hearths as aforeſaid; at which rate there muſt have been* 123 *thouſand Houſes in* London, *and at a Medium between* Dublin *and* Briſtol *proportions* 105 *thouſand Houſes.*

Laſtly, By Certificate from the Hearth-Office, I find the Houſes within the Bills of Mortality to be 105,315.

Having thus found the Houſes, I proceed next to the number of Families in them, and firſt I thought that if there were three 3 *or* 4 *Families or Kitchins in every Houſe of* Paris, *there might be* 2 *Familes in* $\frac{1}{10}$ *of the Houſing of* London; *unto which ſuppoſition, the common opinion of ſeveral Friends, doth concur with my own conjectures.*

As to the number of Heads in each Family, I ſtick to Grant's *obſervation in Page of his fifth Edition, That in Tradeſmen of* London's *Families, there be* 8 *Heads one with another, in Families of higher Ranks, above* 10, *and in the pooreſt*

near

de 5, ſuivant leſquelles proportions je m'étois arrété dans une autre occaſion à 6 ½ pour le medium des têtes qui ſont dans toutes les familles d' *Angleterre*, mais en ce cas cy quittant la fraction j'aime mieux m'accorder avec Mr. *Auzout* pour 6.

Pour conclure y ayant à *Londres* 105315 maiſons, & l'addition des familles doubles eſtant 10531 davantage, en tout 115846, je les ay multipliez par 6 ce qui à produit 695076 pour le nombre des habitans.

Seconde maniere.

J'ay trouvé que les années 1684 & 1685 ſe ſuivant l'une l'autre, & toutes deux ſaines, ſe ſont merveilleuſement rapportées dans leurs enterrements, y en ayant eu 23202 l'an 1684 & 23222 l'an 1685, dont le medium eſt 23212. De plus que les batêmes l'an 1684 eſtoient 14702 & ceux d'année 1685 eſtoient 14730, ainſi j'ay multiplié le medium des enterrements 23212 par 30 ſuppoſant qu'il en meurt un de 30 à *Londres* & cela à produit pour le nombre des habitans 696360 ames.

Maintenant pour prouver qu'il en meurt un de 30 à *Londres* ou environ, je dis.

1. Que

near 5, *according to which proportions, I had upon another occaſion pitch'd the medium of Heads in all the Families of* England *to be* 6 $\frac{1}{3}$, *but quitting the Fraction in this Caſe, I agree with Monſieur* Auzout *for* 6.

To conclude, the Houſes of London *being* 105315, *and the addition of double Families to* 531 *more, in all* 115846; *I multiplied the ſame by* 6, *which produced* 695076 *for the number of People.*

The Second way.

I found that the years 1684 *and* 1685, *being next each other, and both healthful, did wonderfully agree in their Burials,* viz. 1684 *they were* 23202, *and* Anno 1685 23222, *the Medium whereof is* 23212; *Moreover that the Chriſtnings* 1684 *were* 14,702, *and thoſe* Anno 1685 *were* 14730, *wherefore I multiplied the Medium of Burials* 23212 *by* 30, *ſuppoſing that one dies out of* 30 *at* London, *which made the number of People* 696360 *Souls.*

Now to prove that one dies out of 30 *at* London, *or thereabouts, I ſay,*

1. *That*

1. Que *Grant* dans la page de ſa 5e edition aſſure ſur obſervation qu'il en mouroit 3 de 88 par an ce qui eſt à peus prés la méme proportion.

2. J'ay trouvé que dans les lieux ſains & d'entre les adultes il en meurt beaucoup moins, & particulierement d'entre les membres du Parlement environ un de 50 ſeulement, & que les roys d' *Angleterre* ayant regné 24 ans l'un portant l'autre ils ont vécu probablement chacun plus de 30 ans.

3. *Grant* dans la p. à fait voir que de 20 jeunes enfans au deſſous de 10 ans il n'en meurt qu'un par an & Mr. *Auzout* croit qu'à *Rome* il n'en meurt qu'un de 40 du grand nombre de perſonnes adultes qu'il-y-a là c'eſt ce qui fait que je m'attache au nombre de 30 comme à un medium.

4. Je trouve que dans 9 paroiſſes de la campagne ſituées en differens endroits d' *Angleterre* il n'en eſt mort qu'un de 37 par an, ou 311 de 11507, c'eſt pourquoy juſques à ce que je voie un autre nombre rond fondé ſur pluſieurs obſervations plus prés que 30 je crois avoir aſsés bien fait de multiplier nos enterremens par 30 pour trouver le nombre du peuple dont

1. *That* Grant *in the page of his fifth Edition, affirmeth from obſervation, that* 3 *died of* 88 per ann. *which is near the ſame proportion.*

2. *I found that out of healthful places, and out of adult Perſons, there dies much fewer; as but* 1 *out of* 50 *among our Parliament men; and that the Kings of* England *having reigned* 24 *years one with another, probably lived above* 30 *years each.*

3. Grant, *page hath ſhewn that but about* 1 *of* 20 *die* per ann. *out of young Children under* 10 *years old, and Monſieur* Auzout *thinks that but* 1 *of* 40 *die at* Rome, *out of the greater proportion of adult Perſons there, wherefore we ſtill ſtick at a Medium to the number* 30.

4. *In* 9 *Country Pariſhes, lying in ſeveral parts of* England, *I find that but one of* 37 *hath died* per ann. *or* 311 *out of* 11507, *wherefore till I ſee another found number, grounded upon many obſervations, nearer than* 30, *I hope to have done pretty well in multiplying our Burials by* 30; *to find the number of the People;*

le produit eſt 696360, & par les familles nous en trouvons 695076 comme nous avons dit.

Troiſiéme maniere.

Grant à prouvé qu'il mouroit $\frac{1}{3}$ des habitans de la peſte, or l'année 1665 il en mourut de la peſte prés de 98 mille dont le quintuple eſt 490 *m.* comme le nombres des habitans dans l'anneé 1665, à quoy ajoutant plus d'un tiers comme l'augmentation entre les anneés 1665 & 1686; le total eſt 653 mille ce qui s'accorde aſsés bien avec les deux autres contes cy deſſus.

Ainſi tenons nous en à la proportion d'un à 30 juſqu'a ce qu'on puiſſe en établir une meilleure.

Il eſt à remarquer que 2 ou 3 cent maiſons nouvelles feroient une contiguité de 2 ou 3 autres grandes paroiſſes avec les 134 qui de ja compriſes dans les billets de mortalité, & qu'une muraille ovale d'environ 20 mille de tour enfermeroit tout cela & tous les vaiſſeaux qui ſont à *Deptford* & à *Blackwall* & comprendroit auſſi dans cette méme enceinte 20 mille acres de terre, & jetteroient

the product being 696,360, *and what we find by the Families they are* 695,076, *as aforesaid.*

The Third way.

It was prov'd by Grant, *that* $\frac{1}{3}$ *of the People died of the Plague, but* Anno 1665 *there died of the Plague near* 98 *thousand Persons, the Quintuple whereof is* 490 *thousand, as the number of People in the year* 1665, *whereunto adding above* $\frac{1}{3}$, *as the increase between* 1665 *and* 1686, *the total is* 653 *thousand, agreeing well enough with the other two Computations abovementioned.*

Wherefore let the proportion of 1 *to* 30 *continue till a better be put in its place.*

Memorandum, *That* 2 *or* 3 *hundred new Houses would make a Contiguity of* 2 *or* 3 *other great Parishes, with the* 134 *already mentioned in the Bills of Mortality; and that an oval Wall of about* 20 *Miles in compass would enclose the same, and all the Shipping at* Deptford *and* Black-wall, *and would also fence in* 20 *thousand Acres of Land, and*

teroient le fondement de plusieurs avantages tres considerables pour les proprietaires & les habitans de ce terrain aussi bien que pour toute la nation & le gouvernement.

QUA-

lay the foundation or deſignation of ſeveral vaſt advantages to the Owners and Inhabitants of that Ground, as alſo to the whole Nation and Government.

QUATRIEME ESSAY.

De la proportion des habitans des huit plus considerables Villes de la Chrestienté.

1. PAR le nombre des enterremens dans les anneés pui ont esté saines, par la proportion des vivans à ceux qui meurent tous les ans, comme aussi par le nombre des maisons & des familles qui se trouvent dans les 134 paroisses appelleés *Londres* & par le nombre des tétes que l'on estime qu'il-y-a dans chacune, nous nous sommes arrétez à 695718 comme au medium du nombre des habitans de cette ville.

2. En demeurant d'accord qu'il-y-a à *Paris* plus de 80 mille familles à sçavoir 81280 qui demeurent en 23223 maisons 32 hotels & 38 colleges, ou qu'il-y-a 81280 cuisines dans moins de 24 mille portes

The FOURTH ESSAY.

Concerning the proportions of People in the 8 eminent Cities of Chriſtendom undernamed, *viz.*

1. *WE have by the number of Burials in healthful years, and by the proportion of the living to thoſe who die yearly, as alſo by the number of Houſes and Families within the* 134 *Pariſhes, called* London, *and the eſtimate of the Heads in each, pitch'd upon the number of People in that City to be at a Medium* 695718.

2. *We have, by allowing that at* Paris *above* 80 *thouſand Families* (viz. 81280) *do live in* 23223 *Houſes,* 32 *Palaces, and* 38 *Colleges, or that there are* 81280 *Kitchins within leſs than* 24 *thouſand*

portes ſur la rue, en mettant auſſi 30 têtes pour chacune de ceux qui y meurent par neceſſité nous avons pris pour medium des habitans qui s'y trouvent 488055, & nous ne les avons pas reſtraint à 300 *m.* en mettant avec Mr. *Auzout* 6 têtes pour chacune des 50 *m.* maiſons ou familles de *Moreri.*

3. A *Amſterdam* nous mettons 187350 ames à ſçavoir 30 fois le nombre de leurs enterremens qui eſtoient 6245 l'année 1685.

4. Nous mettons à *Veniſe* 134 mille ames ſelon que cela ſe trouva par un conte ſpecial fait par authorité il-y-a environ 10 ans lorſque cette ville ſe trouvoit pleine de gens qui retournoient de *Candie* qui venoit de ſe rendre aux *Turcs.*

5. Nous mettons à *Rome* 119 *m.* chrétiens & 6000 juifs en tout 125 *m.* ames ſuivant le conte qu'en à envoyé icy Mr. *Auzout.*

6. Nous mettons à *Dublin* comme à *Amſterdam* 30 fois ſes enterremens dont le medium pour les 2 dernieres années eſt 2303 c'eſt à dire 69090 ames.

Street-doers; as alſo by allowing 30 *Heads for every one that died neceſſarily there; we have pitch'd upon the number of People there at a Medium to be* 488055, *nor have we reſtrained them to* 300 *thouſand, by allowing with Monſieur* Auzout 6 *Heads for each of* Morery's 50 *thouſand Houſes or Families.*

3. *To* Amſterdam *we allow* 187350 *Souls,* viz. 30 *times the number of their Burials, which were* 6245 *in the year* 1685.

4. *To* Venice *we allow* 134 *thouſand Souls, as found there in a ſpecial account taken by authority, about* 10 *years ſince, when the City abounded with ſuch as returned from* Candia, *then ſurrendred to the* Turks.

5. *To* Rome *we allow* 119 *thouſand Chriſtians and* 6000 *Jews in all* 125 *thouſand Souls, according to an account ſent hither of the ſame by Monſieur* Auzout.

6. *To* Dublin *we allow (as to* Amſterdam) 30 *times its Burials, the Medium whereof for the laſt* 2 *years is* 2303, viz. 69090 *Souls.*

7. *As*

7. A L'egard de *Briſtol* nous diſons que ſi les 6400 maiſons de *Dublin* donnent 69090 ames, il faut que les 5307 maiſons de *Briſtol* donnent plus de 56 *m.* habitans. Dailleurs ſi les 29325 cheminées de *Dublin* donnent 69090 habitans les 16752 cheminées de *Briſtol* en donneront environ 40 mille mais le medium de 56 mille & 40 mille eſt 48 mille.

8. Pour ce qui eſt de *Rouen* nous ne ſcaurions nous en rapporter qu'a la penſeé de Mr. *Auzout* qu'il-y-a dans cette ville là 80 *m.* ames & à la conjecture d'habiles gens que *Rouen* eſt entre $\frac{1}{7}$ & $\frac{1}{8}$ partie de *Paris*, & qu'il eſt d'un tiers plus grand que *Briſtol*, par toutes leſquelles choſes nous eſtimons, jus qu'a ce que vous ayous de nouvelles lumieres, qu'il-y-a à *Rouen* au plus 66 *m.* habitans.

On pourroit maintenant s'étoner pourquoy ayant ſi peu de connoiſſance de *Rouen* nous en avous fait aucune mention, à quoy nous répondons, que nous n'avons pas crù qu'il fut juſte de comparer *Londres* avec *Paris* pour ce qui regarde les vaiſſeaux & le commerce étranger ſans y ajouter *Rouen*, *Rouen* eſtant à l'égard de *Paris* ce que cette partie de *Londres* qui eſt au deſſous du pont eſt à l'égard de celle qui eſt au deſſus Tou-

7. *As to* Briſtol, *we ſay that if the* 6400 *Houſes of* Dublin, *give* 69,090 *People, that the* 5307 *Houſes of* Briſtol, *muſt give above* 56 *thouſand People; Moreover, if the* 29,325 *Hearths of* Dublin, *give* 69,090 *People, the* 16,752 *Hearths of* Briſtol, *muſt give about* 40 *thouſand; but the Medium of* 56 *thouſand and* 40 *thouſand is* 48 *thouſand.*

8. *As for* Rouen, *we have no help, but Monſieur* Auzout's *fancy of* 80 *thouſand Souls to be in that City, and the conjecture of knowing Men, that* Rouen *is between the* $\frac{1}{7}$ *and* $\frac{1}{8}$ *part of* Paris, *and alſo that it is by a third bigger than* Briſtol; *By all which, we eſtimate (till farther light) that* Rouen *hath at moſt but* 66 *thouſand People in it.*

Now it may be wondred why we mentioned Rouen *at all, having had ſo little knowledge of it; whereunto we anſwer, that we did not think it juſt to compare* London *with* Paris, *as to Shipping and Foreign Trade, without adding* Rouen *thereunto;* Rouen *being to* Paris *as that part of* London *which is below the Bridge, is to what is above it.*

All

Toutes les quelles choſes nous ſoumettons de bon coeur à la correction des perſonnes curieuſes & ſinceres, faiſant cependant nos obſervations ſelon les nombres groſſiers que nous allons marquer.

	m.
Londrez	696
Paris	488
Amſterdam	187
Veniſe	134
Rome	125
Dublin	69
Briſtol	48
Rouen	66

Obſer.

All which we heartily ſubmit to the correction of the Curious and Candid, in the mean time obſerving according to the Groſs numbers undermentioned.

	m. thouſands
London	696
Paris	488
Amſterdam	187
Venice	134
Rome	125
Dublin	69
Briſtol	48
Rouen	66

Obſer-

Obſervations ſur ces 8 Villes.

	m.
1. Ques les habit. de *Paris* eſtant	488
ceux de *Rome*	125
ceux de *Rouen*	66
ne font en tout que	741

mille ou 17 mille moins que les 696 mille de *Londres* ſeul.

2. Que les habitans des 2 Villes ou Emporiums d' *Angleterre* à ſçavoir les 696 mille de *Londres* & les 48 *m.* de *Briſtol* font 744 *m.* ou plus.

	m.
qu'a *Paris*	488
Amſterdam	187
Rouen	66
faiſant	741

3. Que

Obſervations on the ſaid 8 Cities.

	m.
1. *That the People of* Paris *being*	488
of Rome	125
of Rouen	66
do make in all but	679
thouſand, or 17 *thouſand leſs than the*	696
thouſand of London *alone.*	

2. *That the People of the* 2 *Engliſh Cities and Emporiums,* viz. *of* London 696 *thouſand, and* Briſtol 48 *thouſand, do make* 744 *thouſand, or more than*

	m.
In Paris	488
Amſterdam	187
Rouen	66
being in all	741

3. *That*

3. Que ces 2 mémes villes d' *Angleterre* ſemblent equivalentes

à *Paris* quia	488 mille ames.
à *Rouen*	66
à *Lyon*	100
à *Thouloufe*	90
en tout	744 *m.*

S'il-y-a quelque erreur dans ces contes des villes de *France* nous eſperons eſtre redreſſez par ceux que nous apprenous qui travaillent ſur ſe ſujet.

4. Que les trois villes du Roy d' *Angleterre* à ſçavoit

	m.			*m.*
Londres	696	excedent	*Paris*	488
Dublin	69		*Amſterdam*	187
Briſtol	48		*Veniſe*	134
	813		ni faiſant que	809

5. Que

3. *That the ſame* 2 *Engliſh Cities ſeem equivalent*

To Paris	*which hath* 488	*thouſ. Souls.*
To Rouen	66	
To Lyons	100	
To Tholouſe	90	
In all	744	

If there be any Error in theſe Conjectures concerning theſe Cities of France, *we hope they will be mended by thoſe whom we hear to be now at work upon that matter.*

4. *That the King of* England's 3 *Cities,* viz.

	m.			*m.*
London	696	exceed	Paris	488
Dublin	69		Amſterdam	187
Briſtol	48		Venice	134
in all	813		*being but*	809

5. Que des 4 grands Emporiums *Londres, Amſterdam, Veniſe* & *Rouen, Londres* ſeul eſt preſque le double des 3 autres à ſçavoir plus que 7 à 4.

	m.		m.
Amſterdam	187	}	
Veniſe	134	}	387
Rouen	66	}	2
	774	*London*	696

6. Que *Londres*, par ce qui paroit, eſt la plus grande & la plus conſiderable ville du monde, mais manifeſtement le plus grand Emporium.

Quand ces aſſertions auront eſſuyé la critique, l'on fera voir par un autre eſſay quel uſage on pourra faire de ces veritez pour L'honeur & le profit du Roy & du Royaume d' *Angleterre*.

CIN-

5. *That of the 4 great Emporiums,* London, Amſterdam, Venice *and* Rouen, London *alone is near double to the other 3, viz. above 7 to 4.*

	m.	
Amſterdam	187	*m.*
Venice	134	387
Rouen	66	2
	774	Lond. 696

6. *That* London *(for ought appears) is the greateſt and moſt conſiderable City of the World, but manifeſtly the greateſt Emporium.*

When theſe Aſſertions have paſt the Examen *of the Criticks, we ſhall make another Eſſay, ſhewing how to apply thoſe Truths to the Honour and Profit of the King and Kingdom of* England.

CINQVIEME ESSAY.

Touchant la Hollande *& le reſte des* Provinces Unies.

DEpuis que cet écrit à eſté achevé on à objecté de *Hollande* qu'il-n'y-a pas d'apparence que ce que nous avons dit du nombre des maiſons & des habitans de *Londres* ſoit vray car s'il l'eſtoit *Londres* ſeroit donc les $\frac{2}{3}$ de toute la province de *Hollande*. A quoy on répond que *Londres* eſt les $\frac{1}{3}$ de toute la *Hollande* & plus, cette Province n'ayant pas un million 44 *m.* habitans dont 696 *m.* font les, $\frac{2}{3}$, ny pas plus de 800 *m.* comme nous l'avons ſouvent oüi dire de fort bonne part, car ſuppoſé qu' *Amſterdam* comme nous l'avons remarqué ailleurs ait 187 *m.* les 7 grandes villes ſuivantes, à 30 l'une portant l'autre, 210 *m.* les 10 ſuivantes à 15 *m.* chacune, 150 *m.* les 10 plus petites à 6 *m.* chacune, 60 mille,

dans

The FIFTH ESSAY.

Concerning *Holland* and the reſt of the United Provinces.

SInce the cloſe of this Paper, it hath been objected from Holland, *That what hath been ſaid of the number of Houſes and People in* London *is not like to be true; for that if it were, then* London *would be the* ⅔ *of the whole Province of* Holland. *To which is anſwered, That* London *is the* ⅔ *of all* Holland *and more, that Province having not a Million and* 44 *thouſand Inhabitants (whereof* 696 m. *is the* ⅔) *nor above* 800 *thouſand, as we have credibly and often heard; for ſuppoſe* Amſterdam *hath, as we have elſewhere noted* 187 *thouſand, the ſeven next great Cities at* 30 *thouſand each one with another* 210 *thouſand, the* 10 *next at* 15 *thouſand each* 150 *thouſand, the* 10 *malleſt at* 6 *thouſand each* 60 *thouſand,*

dans toutes les 28 villes fermées de *Hollande* 607 *m.* dans les bourgs & les villages 193 *m.* ce qui eſt environ une téte pour 4 acres de terre au lieu qu'en *Angleterre* il-y-a 8 acres pour chaque téte hors des villes.

Maintenant ſuppoſé que *Londres* ayant 116 *m.* familles il y eut 5 têtes dans chacune, ce qui eſt le medium entre le conte de Mr. *Auzout* & celui de *Grant*, le total des habitans ſeroit 812 *m.* ou bien ſi nous contons qu'il en meurt un de 34, le medium entre 30 & 37, comme nous avons dit cy deſſus, le total des habitans ſera 34 fois 23212, c'eſt adire 789208, le medium entre ce nombre & les 812 *m.* ſuſdits eſt 800604 excédant de quelque peu 800 *m.* que l'on ſuppoſe eſtre le nombre de la *Hollande*.

Je dis de plus qu'ayant fait autrefois pluſieurs recherches touchant le peuplement du monde, je n'ay jamais trouvé qu'il y eut en aucun pays, non pas méme dans la chine plus d'un homme pour chaque acre de terre meſure d' *Angleterre* pluſieurs pays paſſant pour bien peuplez ou il-n'y-a qu'un homme pour 10 de ces acres j'ay trouvé en meſurant la *Hollande* & la *Weſt-Frize* autrement *North-Holland*

in all the 28 *walled Cities and Towns of* Holland 607 *thouſand, in the Dorps and Villages* 193 *thouſand, which is about one Head for every* 4 *Acres of Land; whereas in* England *there is* 8 *Acres for every Head, without the Cities and Market-Towns.*

Now ſuppoſe London *having* 116 *thouſand Families, ſhould have* 7 *Heads in each, the medium between Monſieur* Auzout *and* Grant's *reckonings, the total of the People would be* 812 *thouſand, or if we reckon that there dies one out of* 34 *(the Medium between* 30 *and* 37 *abovementioned) the total of the People would be* 34 *times* 23212, viz. 789208, *the Medium between which number, and the above* 812 *thouſand is* 800604, *ſomewhat exceeding* 800 *thouſand, the ſuppoſed number of* Holland.

Farthermore, I ſay, that upon former ſearches into the Peopling of the World, I never found that in any Country, (not in China *it ſelf) there was more than one Man to every Engliſh Acre of Land (many Territories paſſing for well-peopled, where there is but one Man for ten ſuch Acres) I found by meaſuring* Holland *and* Weſt-Frizia, aliàs

North-Holland ſur les milleures cartes qu'elle ne contient qu'autant de ces acres qu'il-y-a de monde à *Londres*, c'eſt à dire environ 696 *m.* acres ceſt pourquoy je ne feray point de difficulté d'avancer, juſques à ce que je ſois mieux informé, qu'il-y-a autant de monde à *Londres* qu'en *Hollande*, ou du moins plus des des $\frac{2}{3}$, ce qui ſuffit pou rendre vaine l'objection cy déſſus, ſans qu'il ſoit neceſſaire de ſe mettre en peine de faire monter le nombre des habitans de *Londres* de 696 *m* à 800 *m.* quoy qu'on eut des raiſons ſuffiſantes pour le faire, & que l'autheur de l'excellente carte de *Londres* publieé l'an 1682, conte (comme on le peut voir par cette carte) qu'il-y-a dans cette ville 1200 *m.* habitans, lors méme qu'il n'y avoit que 85 mille maiſons.

La perſonne qui fait cette objection dit auſſi dans la méme Lettre.

1. Qu'il y-a autant de monde dans la Province de *Hollande* que dans les 6 autres Provinces unies enſemble, & en toute l'*Angleterre* & le double de *Paris* & de ſes fauxbourgs, c'eſt à dire 2 millions d'ames. 2. Il dit qu'a *Londres*, *Amſterdam* & autres villes marchandes il-y-a 10 têtes par famille & qu'a *Amſterdam* il-n'y-a pas

22 *m.*

North-Holland, *upon the beſt Maps, that it contained but as many ſuch Acres as* London *doth of People*, viz, *about* 696 *thouſand Acres*; *I therefore venture to pronounce (till better informed) that the People of* London *are as many as thoſe of* Holland, *or at leaſt above* $\frac{3}{4}$ *of the ſame*; *which is enough to diſable the Objection abovementioned*; *nor is there any need to ſtrain up* London *from* 696 *thouſand to* 800 *thouſand, though competent reaſons have been given to that purpoſe, and though the Author of the excellent Map of* London, *ſet forth* Anno 1682, *reckoned the People thereof (as by the ſaid Map appears) to be* 1200 *thouſand, even when he thought the Houſes of the ſame to be but* 85 *thouſand.*

1. *The worthy perſon who makes this objection in the ſame Letter alſo ſaith.*

1. *That the Province of* Holland, *hath as many People as the other* 6 *United Provinces together, and as the whole Kingdom of* England, *and double to the City of* Paris *and its Suburbs, that is to ſay,* 2 *millions of Souls.* 2. *He ſays that in* London *and* Amſterdam, *and other trading Cities there are* 10 *Heads to every Family, and that in* Amſterdam *there are not* 22 *thou-*

22 *m.* familles. 3. Il fait difficulté d'admettre le regiſtre allégué par Mr. *Auzout* qui met 23223 maiſons & plus de 80 mille familles à *Paris*, comme auſſi le regiſtre allégué par Mr. *Petty* qui met 105315 maiſons à *Londres* avec la dixiéme partie de familles plus qu'il-n'y-a de maiſons, & probablement il fera la méme difficulté contre le regiſtre de 1163 *m.* maiſons en toute l' *Angleterre*, qui font à 6 têtes & un tiers par famille, environ 7 millions d'habitans. Sur toutes les quelles choſes nous faiſons les remarques ſuivantes.

1. Que s'il-n'y-a dans *Paris* que 488 *m.* ames, il-n'y-a donc dans toute la *Hollande* que le double de ce nombre ou 976 *m.* ainſi y ayant à *Londres* 696 *m.* ames, il s'y trouve 46 *m.* perſonnes plus que les $\frac{2}{3}$ de toute la *Hollande*.

2. Si *Paris* contient la moitié de ce qu'il-y-a de monde en *Angleterre*, il faut qu'il contienne 3 millions & demy d'ames ou plus de 7 fois 488 *m.* & parce qu'il n'en meure pas 20 mille par an à *Paris*, il faut qu'il n'y en meure qu'un de 175, là ou Mr. *Auzout* croit qu'il en meurt un de 25, & il faut qu'il demeure 149 perſonnes

22 *thouſand Families.* 3. *He excepteth againſt the Regiſter alledged to Monſieur* Auzout, *which makes* 23223 *Houſes, and above* 80 *thouſand Families to be in* Paris, *as alſo againſt the Regiſter alledged by* Petty, *making* 105315 *Houſes to be in* London, *with a tenth part of the ſame to be of Families more than Houſes, and probably will except againſt the Regiſter of* 1163 m. *Houſes to be in all* England, *that number giving at* 6 ½ *Heads to each Family, about* 7 *millions of People, upon all which we remark as followeth,* viz.

1. *That if* Paris *doth contain but* 488 *thouſand Souls, that then all* Holland *containeth but the double of that number, or* 976 *thouſand, wherefore* London *containing* 696 *thouſand Souls, hath above* ⅔ *of all* Holland *by* 46 *thouſand.*

2. *If* Paris *containeth half as many People as there are in all* England, *it muſt contain* 3 *millions and a half of Souls, or above* 7 *times* 488 *thouſand, and becauſe there do not die* 20 *thouſand* per an. *out of* Paris, *there muſt die but one out of* 175, *whereas Monſieur* Auzout *thinks that there dies one out of* 25, *and there muſt live* 149 *Heads*

sonnes dans chacune des maisons de *Paris* mentionneé dans le regiſtre, & qu'il demeure à peine deux perſonnes dans chaque maiſon d' *Angleterre*, toutes les quelles choſes meritent bien à ce que nous croions d'eſtre conſiderées de nouveau.

Je ne puis m'empécher, eſtant *Anglois*, de faire encore une remarque, c'eſt que ces aſſertions reflechiſſent ſur l'empire d' *Angleterre* en ce qu'il y eſt dit que l' *Angleterre* n'a que 2 millions d'habitans, on pouroit auſſi bien avoir ajouté que l'Ecoſſe, l' *Irelande* avec les Iſles de *Man*, *Jerſey* & *Gernſey* n'ont que $\frac{1}{3}$ de ce méme nombre ou 800 *m.* d'avantage, ou que tous les ſujets du Roy d' *Angleterre* en *Europe* ne ſont que 2 millions 800 *m.* ames, aulieu qu'il nous aſſure que les ſujets des 7 Provinces unies ſont 4 millions, à quoy nous répondons qu'au ſentiment méme de celuy qui fait ces objections les ſujets des 7 Provinces ne ſont que le quadruple de *Paris* ou 1932 *m.* ames, n'y en ayant à *Paris* que 488 *m.* comme on à fait voir cy devant, & nous ſoutenons icy qu'il-y-a en *Angleterre* 7 millions d'habitans & que l'Ecoſſe, l'*Irelande* avec les Iſles de *Man* de *Jerſey* & *Gernſey* ont $\frac{1}{3}$ dudit nombre, ou deux millions 800 *m.* ames, aulieu que par ſa doctrine ſi les 7 Provinces ont

Heads in every Houſe of Paris *mentioned in the Regiſter, but there muſt be ſcarce* 2 *Heads in every Houſe of* England, *all which we think fit to be reconſidered.*

I muſt as an Engliſh Man take notice of one point more, which is, that theſe Aſſertions do reflect upon the Empire of England, *for that it is ſaid, that* England *hath but two millions of Inhabitants, and it might as well have been added, that* Scotland *and* Ireland, *with the Iſland of* Man, Jerſey *and* Gernſey *have but* $\frac{2}{5}$ *of the ſame number, or* 800 *thouſand more, or that all the King of* England's *Subjects in* Europe *are but two millions and* 800 *thouſand Souls; whereas he ſaith, that the Subjects of the* 7 *United Provinces are four Millions. To which we anſwer, That the Subjects of the ſaid* 7 *Provinces, are by this Objector's own ſhewing, but the Quadruple of* Paris, *or* 1932 *thouſand Souls,* Paris *containing but* 488000 *as afore hath been prov'd, and we do here affirm, that* England *hath* 7 *millions of People, and that* Scotland, Ireland, *with the Iſlands of* Man, Jerſey *and* Gernſey, *hath* $\frac{4}{5}$ *of the ſaid number, or two millions* 800 *thouſand more, in all* 9 *millions* 800 *thouſand: whereas by the Objector's Doctrine, if the* 7 *Provinces have*

1932

1932 *m.* habitans, le Roy d' *Angleterr* n'auroit dans tous ses états que $\frac{1}{10}$ de c méme nombre asçavoir 1351 *m.* aulie que nous disons 9800 *m.* mille comm nous avons dit Laquelle difference est f considerable qu'elle merite bien qu'on fasse reflection.

Pour conclure nous attendons des cr tiques interressez en cecy qu'ils nou provent.

1. Qu'il-y-a en *Hollande* & en *Weſt Friſe* & dans leurs 28 villes plus d monde qu' à *Londres* ſeul.

2. Que 3 des meilleures villes d *France*, ou deux de toute la *Chrétienté* ou une de toute la terre, ont autant d monde, ou de meilleurs logements, o un plus grand commerce, que *Londre* méme que le l'année Roy Jaques ſecon eſt venu à la couronne.

La Fin.

1932 *thouſand People, the King of* England's *Territories ſhould have but* 1 *of the ſame number,* viz. 1351 *thouſand whereas we ſay* 9800 *thouſand, as aforeſaid, which difference is ſo groſs as that it deſerves to be thus reflected upon.*

To Conclude, we expect from the concerned Criticks of the World, that they would prove,

1. *That* Holland *and* Weſt-Frizia, *and the* 28 *Towns and Cities thereof, hath more People than* London *alone.*

2. *That any* 3 *the beſt Cities of* France, *any* 2 *of all Chriſtendom, or any one of the World, hath the ſame, or better Houſing, and more Foreign Trade than* London, *even in the year that King* James *the Second came to the Empire thereof.*

THE END.

Political Arithmetick,

OR A

DISCOURSE

Concerning

The Extent and Value of Lands, People, Buildings; Husbandry, Manufacture, Commerce, Fiſhery, Artizans, Seamen, Soldiers; Publick Revenues, Intereſt, Taxes, Superlucration, Regiſtries, Banks; Valuation of Men, Increaſing of Seamen, of Militia's, Harbours, Situation, Shipping, Power at Sea, *&c.* As the ſame relates to every Country in general, but more particularly to the Territories of His Majeſty of *Great Britain*, and his Neighbours of *Holland*, *Zealand*, and *France*.

By Sir *WILLIAM PETTY*,
Late Fellow of the *Royal Society*.

London: Printed for *Robert Clavel*, and *Henry Mortlock*. 1699.

TO THE

KING'S

Most Excellent

MAJESTY.

SIR,

WHilſt *every one meditates ſome fit Offering for Your Majeſty, ſuch as may beſt agree with your happy Exaltation to this* Throne; *I preſume to offer, what my Father*

long ſince writ, to ſhew the weight *and* importance *of the* Engliſh Crown.

It was by him ſtiled Political Arithmetick, *in as much as things of* Government, *and of no leſs concern and extent, than the* Glory *of the* Prince, *and the* happineſs *and* greatneſs *of the* People, *are by the* Ordinary *Rules of* Arithmetick, *brought into a ſort of Demonſtration. He was allowed by all, to be the Inventor of this Method of Inſtruction; where the perplexed and intricate ways of the World, are explain'd by*

a very mean piece of Science; and had not the Doctrines of this Eſſay *offended* France, *they had long ſince ſeen the light, and had found* Followers, *as well as improvements before this time, to the advantage perhaps of* Mankind.

But this has been reſerved to the felicity of Your Majeſty's Reign, *and to the expectation which the Learned have therein; and if while in this, I do ſome honor to the Memory of a good Father, I can alſo pay Service, and ſome Teſtimony of my Zeal and Re-*

verence to ſo great a King, *it will be the utmoſt Ambition of*

SIR,

Your Majeſty's moſt Dutiful

and moſt Obedient Subject,

Shelborne.

PRE-

PREFACE.

FOraſmuch as Men, who are in a decaying condition, or who have but an ill opinion of their own Concernments, inſtead of being (as ſome think) the more induſtrious to reſiſt the Evils they apprehend, do contrariwiſe become the more languid and ineffectual in all their Endeavours, neither caring to attempt or proſecute even the probable means of their relief. Upon this Conſideration, as a Member of the Common-Wealth, next to knowing the preciſe Truth in what condition the common Intereſt ſtands, I would in all doubtful Caſes think the beſt, and conſequently not deſpair, with-

out ſtrong and manifeſt Reaſons, carefully examining whatever tends to leſſen my hopes of the Publick Welfare.

I have therefore thought fit to examin the following Perſuaſions, which I find too currant in the World, and too much to have affected the Minds of ſome, to the prejudice of all, *viz.*

The fears of many concerning the Welfare of England.

That the Rents of Lands are generally faln; therefore, and for many other Reaſons, the whole Kingdom grows every day poorer and poorer; that formerly it abounded with Gold, but now there is a great ſcarcity both of Gold and Silver; that there is no Trade nor Employment for the People, and yet that the Land is under-peopled; that Taxes have been many and great

great; that *Ireland* and the Plantations in *America*, and other Additions to the Crown, are a Burthen to *England*; that *Scotland* is of no Advantage; that Trade in general doth lamentably decay; that the *Hollanders* are at our Heels, in the Race of Naval Power; the *French* grow too faſt upon both, aud appear ſo rich and potent, that it is but their Clemency that they do not devour their Neighbours; and finally, that the Church and State of *England*, are in the ſame danger with the Trade of *England*; with many other diſmal Suggeſtions, which I had rather ſtifle than repeat.

The real Prejudices of England.

'Tis true, the Expence of Foreign Commodities hath of late been too great; much of our Plate, had it remain'd Money, would have better ſerved Trade; too many Matters

ters have been regulated by Laws, which Nature, long Cuſtom, and general Conſent, ought only to have governed; the Slaughter and Deſtruction of Men by the late Civil Wars and Plague have been great; the Fire at *London*, and Diſaſter at *Chatham*, have begotten Opinions in the *Vulgus* of the World to our Prejudice; the Nonconformiſts increaſe; the People of *Ireland* think long of their Settlement; the *Engliſh* there apprehend themſelves to be Aliens, and are forced to ſeek a Trade with Foreigners, which they might as well maintain with their own Relations in *England*. But notwithſtanding all this (the like whereof was always in all Places,) the Buildings of *London* grow great and glorious; the *American* Plantations employ four Hundred Sail of Ships; Actions in the

The Improvements of England.

the *East-India* Company are near double the principal Money; those who can give good Security, may have Money under the Statute-Interest; Materials for building (even Oaken-Timber) are little the dearer, some cheaper for the rebuilding of *London*; the *Exchange* seems as full of Merchants as formerly; no more Beggars in the Street, nor Executed for Thieves, than heretofore; the Number of Coaches, and Splendor of Equipage exceeding former Times; the Publick Theatres very magnificent; the King has a greater Navy, and stronger Guards than before our Calamities; the Clergy rich, and the Cathedrals in repair; much Land has been improved, and the Price of Food so reasonable, as that Men refuse to have it cheaper, by admitting of *Irish* Cattle; And in brief, no Man needs

needs to want that will take moderate pains. That ſome are poorer than others, ever was and ever will be: And that many are naturally querulous and envious, is an Evil as old as the World.

Theſe general Obſervations, and that Men eat, and drink, and laugh as they uſe to do, have encouraged me to try if I could alſo comfort others, being ſatisfied my ſelf, that the Intereſt and Affairs of *England* are in no deplorable Condition.

The Author's Method and Manner of Arguing.

The Method I take to do this, is not yet very uſual; for inſtead of uſing only comparative and ſuperlative Words, and intellectual Arguments, I have taken the courſe (as a Specimen of the Political Arithmetick I have long aimed at) to

to expreſs my ſelf in Terms of *Number*, *Weight*, or *Meaſure*; to uſe only Arguments of Senſe, and to conſider only ſuch Cauſes, as have viſible Foundations in Nature; leaving thoſe that depend upon the mutable Minds, Opinions, Appetites, and Paſſions of particular Men, to the Conſideration of others: Really profeſſing my ſelf as unable to ſpeak ſatisfactorily upon thoſe Grounds (if they may be call'd Grounds,) as to foretel the caſt of a Dye; to play well at Tennis, Billiards, or Bowls, (without long practice,) by virtue of the moſt elaborate Conceptions that ever have been written *De Projectilibus & Miſſilibus*, or of the Angles of Incidence and Reflection.

The Nature of his Poſitions and Suppoſitions.

Now the Obſervations or Poſitions expreſſed by *Number*, *Weight*, and *Mea-*

Measure, upon which I bottom the enſuing Diſcourſes, are either true, or not apparently falſe, and which if they are not already true, certain, and evident, yet may be made ſo by the Sovereign Power, *Nam id certum eſt quod certum reddi poteſt*, and if they are falſe, not ſo falſe as to deſtroy the Argument they are brought for; but at worſt are ſufficient as Suppoſitions to ſhew the way to that Knowledge I aim at. And I have withal for the preſent confined my ſelf to the Ten principal Concluſions hereafter particularly handled, which if they ſhall be judged material, and worthy of a better Diſcuſſion, I hope all ingenious and candid Perſons will rectifie the Errors, Defects, and Imperfections, which probably may be found in any of the Poſitions, upon which theſe Ratiocinations

ons were grounded. Nor would it misbecome Authority it ſelf, to clear the Truth of thoſe Matters which private Endeavours cannot reach to.

The

THE
Principal CONCLUSIONS
OF THIS
TREATISE
ARE,

CHAP. I. *That a ſmall Country, and few People, may by their Situation, Trade, and Policy, be equivalent in Wealth and Strength, to a far greater People, and Territory. And particularly, How conveniencies for Shipping, and Water Carriage, do moſt Eminently, and Fundamentally, conduce thereunto,* Pag. 161

Chap. II. *That ſome kind of Taxes, and Publick Levies, may rather increaſe than*

diminiſh the Common-Wealth. pag. 195

Chap. III. *That* France *cannot, by reaſon of Natural and Perpetual Impediments, be more powerful at Sea, than the* Engliſh, *or* Hollanders. pag. 211

Chap. IV. *That the People, and Territories of the King of* England, *are Naturally near as conſiderable, for Wealth, and Strength, as thoſe of* France. pag. 224

Chap. V. *That the Impediments of* England's *Greatneſs, are but contingent and removeable.* pag. 247

Chap. VI. *That the Power and Wealth of* England, *hath increaſed above this forty years.* pag. 256

Chap. VII. *That one tenth part, of the whole Expence, of the King of* England's *Subjects; is ſufficient to maintain one hundred thouſand Foot, thirty thouſand Horſe, and forty thouſand Men at Sea, and to defray all other Charges, of the Government: both Ordinary and Extraordinary, if the ſame were regularly Taxed, and Raiſed.* pag 261

Chap. VIII. *That there are ſpared Hands enough among the King of* England's *Subjects, to earn two Millions* per annum, *more than they now do, and there are Employments,*

ployments, ready, proper, and ſufficient for that purpoſe. pag. 264

Chap. IX. *That there is Mony ſufficient to drive the Trade of the Nation.* pag. 270

Chap. X. *That the King of* England's *Subjects, have Stock competent, and convenient to drive the Trade of the whole Commercial World.* pag. 272

CHAP. I.

That a ſmall Countrey and few People, by its Situation, Trade *and* Policy, *may be equivalent in* Wealth *and* Strength, *to a far greater People and Territory: And particularly that conveniences for* Shipping *and* Water-Carriage, *do moſt Eminently and Fundamentally conduce thereunto.*

THIS firſt principal Concluſion by reaſon of its length, I conſider in three Parts; whereof the firſt is, That a *ſmall Countrey and few People, may be equivalent in Wealth and Strength to a far greater People and Territory.*

How one Man by Art, and one Acre of Land by improvement may be equivalent to many.

This part of the firſt principal Concluſion needs little Proof, foraſmuch as *one* Acre of Land, may bear as much Corn, and feed as many Cattle, as *Twenty*, by the difference of the Soil; ſome parcel of Ground is naturally ſo defenſible, as that an Hundred Men being poſ-

ſeſſed thereof, can reſiſt the Invaſion of Five Hundred; and bad Land may be improved and made good; Bog may by draining be made Meadow; Heath-land may (as in *Flanders*) be made to bear Flax and Clover-Graſs, ſo as to advance in value from One to an Hundred: The ſame Land being built upon, may centuple the Rent which it yielded as Paſture; one Man is more nimble, or ſtrong, and more patient of labor than another; one Man by Art may do as much work, as many without it; *viz.* one Man with a Mill can grind as much Corn, as twenty can pound in a Mortar; one Printer can make as many Copies, as an Hundred Men can write by hand; one Horſe can carry upon Wheels, as much as five upon their Backs; and in a Boat, or upon Ice, as twenty: So that I ſay again, this firſt point of this general Poſition, needs little or no Proof. But the ſecond and more material part of this Concluſion is, that this difference in Land and People, ariſes principally from *Situation*, *Trade*, and *Policy*.

To

To clear this, I ſhall compare *Holland* and *Zealand*, with the Kingdom of *France*. viz. *Holland* and *Zealand* do not contain above one Million of *Engliſh* Acres, whereas the Kingdom of *France* contains above Eighty.

A Compariſon of Holland *and* Zealand *with* France.

Now the original and primitive Difference, holds proportion as Land to Land: for it is hard to ſay, that when theſe places were firſt planted, whether an Acre in *France* was better than the like quantity in *Holland* and *Zealand*: Nor is there any reaſon to ſuppoſe, but that therefore upon the firſt Plantation, the number of Planters was in proportion to the quantity of Land: wherefore, if the People are not in the ſame proportion as the Land, the ſame muſt be attributed to the *Situation* of the Land, and to the *Trade* and *Policy* of the People ſuperſtructed thereupon.

The next thing to be ſhewn is, that *Holland* and *Zealand* at this day, is not only an eightieth part as rich and ſtrong as *France*, but that it hath advanced to one third or thereabouts: which I think will appear upon the Balance of the following particulars; *viz.*

That the Lands of France *are to the Lands of* Holland *and* Zealand, *as eight to one in value.*

As to the Wealth of *France*, a certain Map of that Kingdom, ſet forth *Anno* 1647. repreſents it to be fifteen Millions, whereof ſix did belong to the Church: The Author thereof (as I ſuppoſe meaning the Rents of the Lands only. And the Author of a moſt judicious Diſcourſe of Husbandry (ſuppoſed to be Sir *Richard Weſton*,) doth from *Reaſon* and *Experience* ſhew, that Lands in the *Netherlands*, by bearing *Flax*, *Turneps*, *Clover-graſs*, *Madder*, &c. will eaſily yield 10 *l. per* Acre; ſo as the Territories of *Holland* and *Zealand*, ſhould by this Account yield at leaſt Ten Millions *per Annum*. Yet I do not believe the ſame to be ſo much, nor *France* ſo little as aboveſaid, but rather that one bears to the other as about ſeven, or eight to one.

The Buildings of Amſterdam *are about half in value to thoſe at* Paris.

The People of *Amſterdam*, are one third of thoſe in *Paris* or *London*: Which two Cities differ not in People a twentieth part from each other, as hath appeared by the Bills of Burials and Chriſtnings for each. But the value of the Buildings in *Amſterdam*, may well be half that of *Paris*, by reaſon of the *Foundation*, *Grafts*, and *Bridges*, which

in

in *Amſterdam* are more numerous and chargeable than at *Paris*. Moreover the Habitations of the pooreſt People in *Holland* and *Zealand* are twice or thrice as good as thoſe of *France*: But the People of the one to the People of the other, being but as thirteen to one, the value of the Houſing muſt be as about five to one.

The Houſing in France *above five times the value of thoſe in* Holland *and* Zealand.

The value of the Shipping of *Europe* being about Two Millions of Tuns, I ſuppoſe the *Engliſh* have Five Hundred Thouſand, the *Dutch* Nine Hundred Thouſand, the *French* an Hundred Thouſand, the *Hamburgers* and the Subjects of *Denmark*, *Sweden*, and the Town of *Dantzick* Two Hundred and Fifty Thouſand, and *Spain*, *Portugal*, *Italy*, &c. Two Hundred and Fifty Thouſand: So as the Shipping in our caſe of *France* to that of *Holland* and *Zealand*, is about One to Nine; which reckoned as great and ſmall, new and old, one with another at 8 *l. per* Tun, makes the worth to be as Eight Hundred Thouſand Pounds, to Seven Millions, and Two Hundred Thouſand Pounds. The *Hollanders Capital* in the *Eaſt-India* Company, is worth above Three Millions;

The Shipping of Holland *nine times that of* France.

The Compariſon of Holland *&* France *in the* Indies.

Millions; where the *French* as yet have little or nothing.

The exportations of France and Holland is as 5 to 21.

The value of the Goods exported out of *France* into all Parts, are supposed Quadruple to what is sent to *England* alone; and consequently in all about Five Millions: But what is exported out of *Holland* into *England* is worth Three Millions; and what is exported thence into all the World besides, is Sextuple to the same.

The Revenues of France.

The Monies yearly raised by the King of *France*, as the same appears by the Book entitled (*The State of* France) dedicated to the King, printed *Anno* 1669. and set forth several times by Authority, is Eighty Two Millions of *French* Livers, which is about Six Millions and a half Pounds *Sterl.* Of which summ the Author says, that one fifth part was abated for *non*-valuers or Insolvencies; so (as I suppose) not above Five Millions were effectually raised: But whereas some say, that the King of *France* raised Eleven Millions as the one fifth of the Effects of *France*; I humbly affirm, that all the Land and Sea Forces, all the Building and Entertainments, which we have heard by common Fame, to have been

set

forth and made in any of these seven Years, needed not to have cost six illions Sterling. Wherefore, I suppose hath not raised more, especially since re were one fifth Insolvencies, when Tax was at that pitch. But *Holland* and *Zealand*, paying 67 of the 100 d by all the United Provinces; and City of *Amsterdam* paying 27 of said 67. It follows that if *Amdam* hath paid 4000 *l.* Flemish *per m*, or about 1400000 *l. per Annum*, or 0000 *l.* Sterling; that all *Holland* and *aland*, have paid 2100000 *l. per Anm*: Now the Reasons why I think they y so much, are these, *viz.*

The Taxes paid by Holland and Zealand.

1. The Author of the State of the *therlands* saith so.

2. Excise of Victual at *Amsterdam*, ms above half the original Value of e same, *viz.*

Ground-Corn pays 20 Stivers the shel, or 63 Gilders the Last; Beer 3 Stivers the Barrel, Housing $\frac{1}{8}$ of the nt, Fruit $\frac{1}{8}$ of what it cost; other mmodities $\frac{1}{7}$, $\frac{1}{9}$, $\frac{1}{9}$, $\frac{1}{11}$; Salt *ad libitum*. l weighed Goods pay besides the Prees a vast summ. Now if the Expence the People of *Amsterdam* at a medium

dium, and without Exciſe were 8. *l.* *Annum*, whereas in *England*, 'tis 7 *l.* if all the ſeveral Impoſts above-nam raiſe it Five Pound more, there b 1600000 Souls in *Amſterdam*, the ſu of 800000 *l.* Sterling *per Annum* will th by be raiſed.

3. Though the Expence of each H ſhould be 13 *l. per Annum*; 'tis known that there be few in *Amſter* who do not earn much more than ſaid Expence.

4 If *Holland* and *Zealand* pay *per An* 2100000 *l* then all the Provinces to ther, muſt pay about Three Millio Leſs than which ſumm *per Annum*. perh is not ſufficient to have maintained Naval War with *England*, 72000 La Forces, beſides all other the ordin Charges of their Government, wher the Church is there a part. To conclu it ſeems from the Premiſſes, that all *Fr* doth not raiſe above thrice as much fr the publick *Charge*, as *Holland* and Z *land* alone do.

The difference of Intereſt between Holland & France.

5. Intereſt of Money in *France*, 7 *l. per Cent.* but in *Holland* ſcarce h ſo much.

6. T

The Countries of *Holland* and *Zea-*
conſiſting as it were of Iſlands
led with the Sea, Shipping, and
hes: is defenſible at one fourth of
charge, that a plain open Country
nd where the ſeat of War may be
Winter and Summer: whereas in
thers, little can be done but in the
mer only.

But above all the particulars hither- *The ſuperlucration between France and Holland.*
nſidered, that of *ſuperlucration* ought
y to be taken in: For if a Prince
never ſo many Subjects, and his
ntry be never ſo good, yet if either
ugh ſloth, or extravagant expences,
ppreſſion and Injuſtice, whatever is
ed ſhall be ſpent as faſt as gotten,
State muſt be accounted poor.
refore let it be conſidered, how
h or how many times rather, *Hol-*
and *Zealand* are now above what
were 100 years ago: which we
alſo do of *France*: Now if *France*
ſcarce doubled its Wealth and
er, and that the other have decupled
s; I ſhall give the preference to the
r, even although the $\frac{1}{5}$ increaſed
the one, ſhould not exceed the one
gained by the other; becauſe one
has

has a ſtore for Nine Years, the other
for one.

To Conclude, upon the whole it ſe
that though *France* be in People to
land and *Zealand* as 13 to 1, and in q
tity of good Land, as 80 to one; y
is not 13 times richer and ſtronger, n
leſs 80 times, nor much above th
which was to be proved.

The cauſes of the difference between France *and* Holland.

Having thus diſpatched the two
Branches of the firſt principal Conclu
it follows, to ſhew that this differenc
Improvement in *Wealth* and *Stre*
ariſes from the *Situation*, *Trade*, and
licy of the places reſpectively; and
particular from Conveniencies for S
ping and Water-Carriage.

Many Writing on this Subject, do
magnifie the *Hollanders*, as if they w
more, and all other Nations leſs t
Men; (as to the matters of Trade
Policy,) making them Angels, and ot
Fools, Brutes, and Sots, as to thoſe
ticulars: whereas I take the Foundat
of their Atchievements to lie origin
in the Situation of the Country, wh
by they do things inimitable by oth
and have advantages whereof others
incapable.

F

Firſt, The Soil of *Holland* and *Zealand* is low Land, Rich and Fertile; whereby it is able to feed many Men, and ſo as that Men may live near each other, for their mutual aſſiſtance in Trade. I ſay, that a Thouſand Acres, that can feed 1000 Souls, is better than 10000 Acres of no more effect, for the following reaſons, *viz.*

The Reaſons why rich Land is better than coarſe Land, tho of the ſame Rent, and conſequently why Holl. *is better than* Fran.

1. Suppoſe ſome great Fabrick were in Building by a Thouſand Men, ſhall not much more time be ſpared if they lived all upon a Thouſand Acres, than if they were forced to live upon ten times as large a Scope of Land?

2. The charge of the cure of their Souls, and the Miniſtry would be far greater in one caſe than in the other; as alſo of mutual defence in caſe of Invaſion, and even of Thieves and Robbers; Moreover the charge of the adminiſtration of Juſtice would be much eaſier, where Witneſſes and Parties may be eaſily Summoned; Attendance leſs expenſive, when Mens Actions would be better known; when Wrongs and Injuries could not be covered, as in thin peopled places they are.

Laſtly,

Laſtly, thoſe who live in Solitary places, muſt be their own Soldiers, Divines, Phyſicians, and Lawyers; and muſt have their Houſes ſtored with neceſſary Proviſions (like a Ship going upon a long Voyage,) to the great waſt, and needleſs expence of ſuch Proviſions. The value of this firſt Convenience to the *Dutch*, I reckon or eſtimate to be about 100000 *l. per annum.*

The Advantages from the Level and Wind-Mills of Holland.

2ly. *Holland* is a Level Country, ſo as in any part thereof, a Wind-Mill may be ſet up, and by its being moiſt and vaporous, there is always Wind ſtirring over it, by which advantage the Labour of many thouſand Hands is ſaved; foraſmuch as a Mill made by one Man, in half a year, will do as much Labour, as four Men for Five Years together. This advantage is greater or leſs, where employment or eaſe of Labour is ſo; but in *Holland* 'tis eminently great, and the worth of this conveniency is near an Hundred and fifty thouſand Pounds.

The Advantages from Holland *of Manufacture and Commerce.*

The Situation of Holland *and* Zealand *upon the Mouths of three great Rivers.*

3ly. There is much more to be gained by *Manufacture* than *Husbandry*; and by *Merchandize* than *Manufacture*: but *Holland* and *Zealand*, being ſeated at the Mouths of three long great Rivers, and paſſing

paſſing through Rich Countries, do keep all the Inhabitants upon the ſides of thoſe Rivers but as Husbandmen, whilſt themſelves are the Manufactors of their Commodities, and do diſpence them into all Parts of the World; making returns for the ſame, at what Prizes almoſt they pleaſe themſelves: And in ſhort, they keep the Keys of Trade of thoſe Countries, through which the ſaid Rivers paſs. The value of this third Conveniency, I ſuppoſe to be 200000 *l.*

4ly. In *Holland* and *Zealand*, there is ſcarce any place of Work or Buſineſs, one Mile diſtant from a Navigable Water: And the charge of Water-carriage is generally but $\frac{1}{3}$ or $\frac{1}{4}$ part of Land-carriage. Wherefore if there be as much Trade there as in *France*, then the *Hollanders* can out-ſell the *French* $\frac{1}{3}$ of the Expence, of all Travelling, Poſtage, and all Carriage whatſoever: Which even in *England* I take to be 300000 *l. per ann.* where the very Poſtage of Letters, coſts the People perhaps 50000 *l. per annum*, (though Farmed at much leſs:) And all other Labour of Horſes, and Porters, at leaſt ſix times much. The value of

Nearneſs to navigable Waters.

this Convenieney I eſtimate to be above Three hundred thouſand pounds *per annum*.

The defenſibleneſs of Holland.

5. The defenſibleneſs of the Country, by reaſon of its Situation in the Sea upon *Iſlands*; and in the *Marſhes*, *Impaſſible ground Diked* and *Trenched*; eſpecially conſidering how that place is aimed at for its Wealth: I ſay the charge of defending that Country, is eaſier than if it were a plain Champion, at leaſt 200000 *l. per annum*.

Harbouring of Shipping at ſmall Expence.

6. *Holland* is ſo conſiderable for keeping Ships in Harbour with ſmall Expence of Men, and ground Tackle; that it ſaves *per annum* 200000 *l.* of what muſt be ſpent in *France*. Now if all theſe natural advantages do amount to above one Million *per annum* Profits; and that the Trade of all *Europe*, nay of the whole World, with which our *Europeans* do Trade, is not above Forty five Millions *per annum*, and if $\frac{1}{40}$ of the value be of the Profit, it is plain that the *Hollander* may Command and Govern the whole Trade.

Advantages from Fiſhing.

7. Thoſe who have their Situation thus towards the *Sea*, and abound with *Fiſh* at home, and having alſo the command

mand of *Shipping*; have by Conſequence the *Fiſhing Trade*; whereof, that of *Herring* alone, brings more yearly Profit to the *Hollanders* than the Trade of the *Weſt-Indies* to *Spain*; or of the *Eaſt* to themſelves: As many have affirmed: Being as the ſame ſay, *viis & modis*, of above three Millions *per Annum* Profit.

Advantages by Naval Proviſions.

8. It is not to be doubted, but thoſe who have the Trade of *Shipping* and *Fiſhing*, will ſecure themſelves of the Trade of *Timber* for *Ships*, *Boats*, *Maſts*, and *Cask*; of *Hemp* for *Cordage*, *Sails*, and *Nets*; of *Salt*, of *Iron*; as alſo of *Pitch*, *Tar*, *Roſin*, *Brimſtone*, *Oil*, and *Tallow*, as neceſſary Appurtenances to *Shipping* and *Fiſhing*.

Fitneſs for Univerſal Trade.

9. Thoſe who predominate in *Shipping*, and *Fiſhing*, have more occaſions than others to frequent all parts of the World, and to obſerve what is *wanting* or *redundant* every where; and what each People can do, and what they deſire; and conſequently to be the *Factors* and *Carriers*, for the whole World of Trade. Upon which ground they bring all Native Commodities to be Manufactured at home; and carry the ſame back, even to that Country

in which they grew: All which we ſee. For do they not work the *Sugars* of the *Weſt-Indies*? the *Timber* and *Iron* of the *Baltick*? the *Hemp* of *Ruſſia*? the *Lead*, *Tin*, and *Wooll* of *England*? the *Quick-ſilver* and *Silk* of *Italy*? the *Yarns*, and *Dying-Stuffs* of *Turkey*? &c. To be ſhort, in all the ancient States, and Empires, thoſe who had the *Shipping*, had the *Wealth*: And if 2 *per Cent.* in the *Price* of Commodities, be perhaps 20 *per Cent.* in the *Gain*; it is manifeſt that they who can in *forty five Millions*, underſel others by *one Million*, (upon account of natural, and intrinſick advantages only;) may eaſily have the Trade of the World: Without ſuch Angelical Wits and Judgments, as ſome attribute to the *Hollanders*.

Having thus done with their *Situation*, I come now to their *Trade*.

Artificial Advantages of Trade.

It is commonly ſeen, that each Country flouriſheth in the Manufacture of its own Native Commodities, *viz.* *England* for Woollen Manufacture, *France* for Paper, *Luic-Land* for Iron-Ware, *Portugal* for Confections, *Italy* for Silks: Upon which Principle it follows, that *Holland* and *Zealand* muſt flouriſh moſt in

in the Trade of Shipping, and ſo become Carriers and Factors of the whole World of Trade. Now the advantages of the Shipping Trade are as followeth, *viz.*

Husbandmen, Seamen, Soldiers, Artizans and Merchants, are the very Pillars of any Common-Wealth; all the other great Profeſſions, do riſe out of the infirmities and miſcarriages of theſe; now the Seaman is three of theſe four. For every Seaman of Induſtry and Ingenuity, is not only a Navigator, but a Merchant, and alſo a Soldier; not becauſe he hath often occaſion to fight, and handle Arms; but becauſe he is familiarized with hardſhip and hazards, extending to Life and Limbs; for Training and Drilling is a ſmall part of Soldiery, in reſpect of this laſt mentioned Qualification; the one being quickly and preſently learned, the other not without many years moſt painful experience: wherefore to have the occaſion of abounding in Seamen, is a vaſt conveniency.

Husbandmen, Seamen, Soldiers, Artizans, and Merchants, are the very Pillars of a Common-wealth, and a Seaman is three of them.

2. The Husbandman of *England* earns but about 4 *s. per* Week, but the Seamen have as good as 12 *s.* in Wages,

Victuals (and as it were houſing) with other accommodations, ſo as a Seaman is in effect three Husbandmen; wherefore there is little Ploughing, and Sowing of Corn in *Holland* and *Zealand*, or breeding of young Cattle: but their Land is improved by building of Houſes, Ships, Engines, Dikes, Wharfs, Gardens of Pleaſure, extraordinary Flowers and Fruits; for Dairy and feeding of Cattle, for Rape, Flax, Madder, *&c.* The Foundations of ſeveral advantageous Manufactures.

A Seaman equivalent to three Husbandmen.

3. Whereas the Employment of other Men is confined to their own Country, that of Seamen is free to the whole World; ſo as where Trade may (as they call it) be dead here or there, now and then, it is certain that ſome where or other in the World, Trade is always quick enough, and Proviſions are always plentiful, the benefit whereof, thoſe who command the Shipping enjoy, and they only.

Silver, Gold, and Jewels, are Univerſal Wealth.

4. The great and ultimate effect of Trade is not Wealth at large, but particularly abundance of Silver, Gold, and Jewels, which are not periſhable, nor ſo mutable as other Commodities, but are Wealth

Wealth at all times, and in all places: Whereas abundance of Wine, Corn, Fowls, Fleſh, *&c.* are Riches but *hic & nunc*, ſo as the raiſing of ſuch Commodities, and the following of ſuch Trade, which does ſtore the Country with Gold, Silver, Jewels, *&c.* is profitable before others. But the Labour of Seamen, and Freight of Ships, is always of the nature of an Exported Commodity, the overplus whereof, above what is Imported, brings home Money, *&c.*

5. Thoſe who have the command of the Sea-Trade, may Work at eaſier Freight with more profit, than others at greater: for as Cloth muſt be cheaper made, when one Cards, another Spins, another Weaves, another Draws, another Dreſſes, another Preſſes and Packs; than when all the Operations abovementioned, were clumſily performed by the ſame hand; ſo thoſe who command the Trade of Shipping, can build long ſlight Ships for carrying Maſts, Fir-Timber, Boards, Balks, *&c.* And ſhort ones for Lead, Iron, Stones, *&c.* One ſort of Veſſels to Trade at Ports where they need never lie a ground, others where they muſt jump upon the

Reaſons why the Hollanders Sail for leſs Freight.

Sand twice every twelve hours; One sort of Vessels, and way of manning in time of Peace, and for cheap gross Goods, another for War and precious Commodities; One sort of Vessels for the turbulent Sea, another for Inland Waters and Rivers; One sort of Vessels, and Rigging, where haste is requisite for the Maidenhead of a Market, another where one fifth or one fourth part of the time makes no matter. One sort of Masting and Rigging for long Voyages, another for Coasting. One sort of Vessels for Fishing, another for Trade. One sort for War for this or that Country, another for Burthen only. Some for Oars, some for Poles, some for Sails, and some for draught by Men or Horses, some for the Northern Navigations amongst Ice, and some for the South against Worms, *&c.* And this I take to be the chief of several Reasons, why the *Hollanders* can go at less Freight than their Neighbours, *viz.* because they can afford a particular sort of Vessels for each particular Trade.

I have shewn how Situation hath given them Shipping, and how Shipping hath given them in effect all other Trade,

and

and how Foreign Traffick muſt give them as much Manufacture as they can manage themſeves, and as for the overplus, make the reſt of the World but as Workmen to their Shops. It now remains to ſhew the effects of their Policy, ſuperſtructed upon theſe natural advantages, and not as ſome think upon the exceſs of their Underſtandings. *The Policy of Holland.*

I have omitted to mention the *Hollanders* were one hundred years ſince, a poor and oppreſſed People, living in a Country naturally cold, moiſt, and unpleaſant: and were withal perſecuted for their Heterodoxy in Religion.

From hence it neceſſarily follows, that this People muſt Labour hard, and ſet all hands to Work: Rich and Poor, Young and Old, muſt ſtudy the Art of Number, Weight, and Meaſure; muſt fare hard, provide for Impotents, and for Orphans, out of hope to make profit by their Labours: muſt puniſh the Lazy by Labour, and not by cripling them: I ſay, all theſe particulars, ſaid to be the ſubtile excogitations of the *Hollanders*, ſeem to me, but what could not almoſt have been otherwiſe.

Liber-

Liberty of Conſcience, Regiſtry of Conveyances, ſmall Cuſtoms, Banks, Lumbards, and Law Merchant, riſe all from the ſame Spring, and tend to the ſame Sea; as for lowneſs of Intereſt, it is alſo a neceſſary effect of all the premiſſes, and not the Fruit of their contrivance.

Wherefore we ſhall only ſhew in particular the efficacy of each, and firſt of Liberty of Conſcience; but before I enter upon theſe, I ſhall mention a Practice almoſt forgotten, (whether it referreth to Trade or Policy is not material,) which is the *Hollanders* undermaſting, and ſailing ſuch of their Shipping, as carry cheap and groſs Goods, and whoſe Sale doth not depend much upon Seaſon.

Undermaſting of Ships.

It is to be noted, that of two equal and like Veſſels, if one ſpreads one thouſand ſix hundred Yards of like Canvaſe, and the other two thouſand five hundred, their ſpeed is but as four to five, ſo as one brings home the ſame Timber in four days, as the other will in five. Now if we conſider that although thoſe Ships be but four or five days under Sail, that they are perhaps thirty upon the

the Voyage; ſo as the one is but one thirtieth part longer upon the whole Voyage than the other, though one fifth longer under Sail. Now if Maſts, Yards, Rigging, Cables, and Anchors, do all depend upon the quantity and extent of the Sails, and conſequently Hands alſo; it follows that the one Veſſel, goes at one third leſs charge, loſing but one thirtieth of the time, and of what depends thereupon.

Liberty of Conſcience, and the Reaſons thereof in Holland.

I now come to the firſt Policy of the *Dutch*, *viz.* Liberty of Conſcience; which I conceive they grant upon theſe grounds. (But keeping up always a Force to maintain the Common Peace,) 1. They themſelves broke with *Spain* to avoid the impoſition of the Clergy. 2. Diſſenters of this kind, are for the moſt part, thinking, ſober, and patient Men, and ſuch as believe that Labour and Induſtry is their Duty towards God. (How erroneous ſoever their Opinions be) 3. Theſe People believing the Juſtice of God, and ſeeing the moſt Licentious perſons, to enjoy moſt of the World, and its beſt things, will never venture to be of the ſame Religion, and Profeſſion with Voluptuaries, and Men of extreme Wealth

Wealth and Power, who they think have their Portion in this World.

4. They cannot but know, That no Man can believe what himſelf pleaſes, and to force Men to ſay they believe what they do not, is vain, abſurd, and without Honor to God.

5. The *Hollanders* knowing themſelves not to be an Infallible Church, and that others had the ſame Scripture for Guides as themſelves, and withal the ſame Intereſt to ſave their Souls, did not think fit to make this matter their buſineſs; not more than to take Bonds of the Seamen they employ, not to caſt away their own Ships and Lives.

6. The *Hollanders* obſerve that in *France* and *Spain*, (eſpecially the latter) the Churchmen are about one hundred for one, to what they uſe or need; the principal care of whom is to preſerve Uniformity, and this they take to be a ſuperfluous charge.

7. They obſerve where moſt endeavours have been uſed to keep Uniformity, there Heterodoxy hath moſt abounded.

8. They believe that if one fourth of the People were Heterodox, and that if

that

that whole quarter ſhould by Miracle be removed, that within a ſmall time one fourth of the remainder would again become Heterodox ſome way or other, it being natural for Men to differ in Opinion in matters about Senſe and Reaſon: and for thoſe who have leſs Wealth, to think they have the more Wit and Underſtanding, eſpecially of the things of God, which they think chiefly belong to the Poor.

9. They think the caſe of the Primitive Chriſtians, as it is repreſented in the *Acts of the Apoſtles*, looks like that of the preſent Diſſenters, (I mean externally.) Moreover it is to be obſerved that Trade doth not (as ſome think) beſt flouriſh under popular Governments, but rather that Trade is moſt vigorouſly carried on, in every State and Government, by the Hetorodox part of the ſame, and ſuch as profeſs Opinions different from what are publickly eſtabliſhed: (that is to ſay) in *India* where the *Mahometan* Religion is Authorized, there the *Banians* are the moſt conſiderable Merchants. In the *Turkiſh* Empire the *Jews*, and Chriſtians. At *Venice*, *Naples*, *Leghorn*, *Genoua*, and *Lisbone*, *Jews*,

The Trade of any Country is chiefly managed by the Heterodox Party.

Jews, and Non-Papiſt Merchant-Strangers: but to be ſhort, in that part of *Europe*, where the *Roman* Catholick Religion, now hath, or lately hath had Eſtabliſhment; there three Quarters of the whole Trade, is in the hands of ſuch as have ſeparated from the Church (that is to ſay) the Inhabitants of *England*, *Scotland*, and *Ireland*, as alſo thoſe of the *United Provinces*, with *Denmark*, *Sweden*, and *Norway*, together with the Subjects of the *German* Proteſtant Princes, and the *Hans* Towns, do at this day poſſeſs three Quarters of the Trade of the World; and even in *France* it ſelf, the *Hugonots* are proportionably far the greater Traders; nor is it to be denied but that in *Ireland*, where the ſaid *Roman* Religion is not authorized, there the Profeſſors thereof have a great part of the Trade. From whence it follows that Trade is not fixt to any Species of Religion as ſuch; but rather as before hath been ſaid to the Heterodox part of the whole, the Truth whereof appears alſo in all the particular Towns of greateſt Trade in *England*; nor do I find reaſon to believe, that the *Roman* Catholick Sea-men in the whole World,

All the Papiſts Sea-men of Europe *are ſcarce ſufficient to Man the King of* England's *Fleet.*

are

re ſufficient to Man effectually a Fleet qual to what the King of *England* now ath; but the Non-Papiſt Sea-men, can o above thrice as much. Wherefore he hom this latter Party doth affectionate- own to be their Head, cannot proba- y be wronged in the Sea-concernments the other; from whence it follows, hat for the advancement of Trade, (if hat be a ſufficient reaſon) Indulgence uſt be granted in Matters of Opinion; hough licentious actings as even in *Hol- and*, be reſtrained by force.

The ſecond Policy or Help to Trade ſed by the *Hollanders*, is ſecuring the Titles to Lands and Houſes; for al- hough Lands and Houſes may be cal- ed *Terra firma & res immobiles*, yet he Title unto them is no more certain, han it pleaſes the Lawyers and Autho- ity to make them; wherefore the *Hol- anders* do by Regiſtries, and other ways of Aſſurance make the Title as immo- vable as the Lands, for there can be no ncouragement to Induſtry, where there is no aſſurance of what ſhall be gotten by it; and where by fraud and corrup- tion, one Man may take away with eaſe and by a trick, and in a moment what

Firm Titles to Lands & Houſes.

what another has gotten by many Years extreme labour and pains.

Of the introducing Regiſtries into England.

There hath been much Diſcourſe about introducing of Regiſtries into *England*; the Lawyers for the moſt part object againſt it, alledging, that Titles of Land in *England* are ſufficiently ſecure already; wherefore omitting the Conſiderations of ſmall and oblique Reaſons *pro & contra*, it were good that enquiry were made from the Officers of ſeveral Courts, to what Summ or Value Purchaſers have been damnified for this laſt ten Years, by ſuch fraudulent Conveyances as Regiſtries would have prevented; the tenth part whereof at a *Medium*, is the annual loſs which the People ſuſtain for want of them, and then computation is to be made of the annual charge of Regiſtring ſuch extraordinary Conveyances, as would ſecure the Title of Lands; now by comparing theſe two Summs, the Queſtion ſo much agitated may be determined; though ſome think that though few are actually damnified, yet that all are hindered by fear and deterred from Dealing.

The Banks of Holland

Their third Policy is their Bank, the uſe whereof is to encreaſe Money, or rather to make

make a ſmall Summ equivalent in Trade to a greater, for the effecting whereof theſe things are to be conſidered. 1. How much Money will drive the Trade of the Nation. 2. How much current Money there is actually in the Nation. 3. How much Money will ſerve to make all payments of under Fifty Pounds or any other more convenient Summ throughout the Year. 4. For what Summ the Keepers of the Bank are unqueſtionable Security: If all theſe four Particulars be well known, then it may alſo be known, how much of the ready Money above-mentioned may ſafely and profitably be lodged in the Bank, and to how much ready current Money the ſaid depoſited Money is equivalent. As for Example, ſuppoſe a Hundred Thouſand Pounds will drive the Trade of the Nation, and ſuppoſe there be but Sixty Thouſand Pounds of ready Money in the ſame; ſuppoſe alſo that Twenty Thouſand Pounds will drive on, and anſwer all Payments made of under Fifty Pounds. In this caſe, Forty of the Sixty being put into the Bank, will be equivalent to Eighty, which Eighty and Twenty kept out of the Bank do make up an Hundred, (that is to ſay) enough to drive

the Trade as was propoſed; where note that the Bank-keepers muſt be reſponſible for double the ſumm intruſted with them, and muſt have Power to levy upon the general, what they happen to looſe unto particular Men.

Upon which Grounds, the Bank may freely make uſe of the received Forty Thouſand Pounds, whereby the ſaid ſumm, with the like ſumm in Credit, makes Eighty Thouſand Pounds, and with the Twenty reſerved an Hundred.

The Hollanders are ſeldom Husbandmen or Foot Soldiers.

I might here add many more particulars, but being the ſame as have already been noted by others, I ſhall conclude only with adding one Obſervation which I take to be of conſequence, *viz.* That the *Hollanders* do rid their Hands of Two Trades, which are of greateſt turmoil and danger, and yet of leaſt profit; the firſt whereof is that of a common and private Soldier, for ſuch they can hire from *England*, *Scotland*, and *Germany*, to venture their Lives for Six Pence a Day, whilſt themſelves ſafely and quietly follow ſuch Trades, whereby the meaneſt of them gain ſix times as much, and withal by this entertaining of Strangers for Soldiers; their Country

trey becomes more and more peopled, foraſmuch as the Children of ſuch Strangers, are *Hollanders* and take to Trades, whilſt new Strangers are admitted *ad infinitum*; beſides theſe Soldiers at convenient intervals, do at leaſt as much work as is equivalent to what they ſpend, and conſequently by this way of employing of Strangers for Soldiers, they People the Countrey and ſave their own Perſons from danger and miſery, without any real Expence, effecting by this method, what others have in vain attempted by Laws for Naturalizing of Strangers, as if Men could be charmed to tranſplant themſelves from their own Native, into a Foreign Countrey merely by words, and for the bare leave of being called by a new Name. In *Ireland*, Laws of Naturalization have had little Effect, to bring in Aliens, and 'tis no wonder, ſince *Engliſh* Men will not go thither without they may have the pay of Soldiers, or ſome other advantage amounting to maintenance.

The Method of computing the value of Men and People.

Having intimated the way by which the *Hollanders* do increaſe their People, I ſhall here digreſs to ſet down the way of computing the value of every Head one

one with another, and that by the inſtance of People in *England, viz.* Suppoſe the People of *England* be Six Millions in number, that their Expence at 7 *l. per* Head be Forty Two Millions: ſuppoſe alſo that the Rent of the Lands be Eight Millions, and the yearly profit of all the Perſonal Eſtate be Eight Millions more; it muſt needs follow, that the Labour of the People muſt have ſupplyed the remaining Twenty Six Millions, the which multiplied by Twenty (the Maſs of Mankind being worth Twenty Years purchaſe as well as Land) makes Five Hundred and Twenty Millions, as the value of the whole People: which number divided by Six Millions, makes above 80 *l.* Sterling, to be the value of each Head of Man, Woman, and Child, and of adult Perſons twice as much; from whence we may learn to compute the loſs we have ſuſtained by the Plague, by the Slaughter of Men in War, and by the ſending them abroad into the Service of Foreign Princes. The other Trade of which the *Hollanders* have rid their Hands, is the old Patriarchal Trade of being Cow-keepers, and in a great Meaſure of that which concerns Plough-

Ploughing and Sowing of Corn, having put that Employment upon the *Danes* and *Polanders*, from whom they have their young Cattel and Corn. Now here we may take notice, that as Trades and curious Arts increaſe; ſo the Trade of Husbandry will decreaſe, or elſe the Wages of Husbandmen muſt riſe, and conſequently the Rents of Lands muſt fall.

For proof whereof I dare affirm, that if all the Husbandmen of *England*, who now earn but 8 *d.* a day or thereabouts, could become Tradeſmen and earn 16 *d.* a day (which is no great Wages 2 *s.* and 2 *s.* 6 *d.* being uſually given) that then it would be the advantage of *England* to throw up their Husbandry, and to make no uſe of their Lands, but for Graſs-Horſes, Milch-Cows, Gardens and Orchards, *&c.* which if it be ſo, and if Trade and Manufacture have increaſed in *England* (that is to ſay) if a greater part of the People, apply themſelves to thoſe Faculties, than there did heretofore, and if the price of Corn be no greater now, than when Husbandmen were more numerous, and Tradeſmen fewer; it follows from that ſingle

Reasons why Rents do fall.

reason (though others may be added) that the Rents of Land must fall: As for Example, suppose the price of Wheat be 5 *s.* or 60 *d.* the Bushel; now if the Rent of the Land whereon it grows be the third Sheaf; then of the 60 *d.* 20 *d.* is for the *Land*, and 40 *d.* for the *Husbandman*; but if the Husbandman's Wages should rise one eighth part, or from 8 *d.* to 9 *d. per Diem*, then the Husbandman's share in the Bushel of Wheat, rises from 40 *d.* to 45 *d.* and consequently the Rent of the Land must fall from 20 *d.* to 15 *d.* for we suppose the price of the Wheat still remains the same; especially since we cannot raise it, for if we did attempt it, Corn would be brought in to us, (as into *Holland*) from Foreign Parts, where the State of Husbandry was not changed.

And thus I have done with the first principal Conclusion, that, *A small Territory, and even a few People, may by Situation, Trade, and Policy, be made equivalent to a greater; and that convenience for Shipping, and Water-carriage, do most eminently and fundamentally conduce thereunto.*

CHAP.

CHAP. II.

That ſome kind of Taxes *and Publick* Levies, *may rather* increaſe *than* diminiſh *the Wealth of the Kingdom.*

IF the Money or other Effects, levyed from the People by way of *Tax*, were deſtroyed and annihilated; then 'tis clear that ſuch *Levies* would diminiſh the Commonwealth: Or if the ſame were exported out of the Kingdom without any return at all, then the caſe would be alſo the ſame or worſe: But if what is levyed as aforeſaid, be only transferred from one hand to another, then we are only to conſider whether the ſaid Money or Commodities, are taken from an improving hand, and given to an ill Husband, or *vice verſa*: As for Example, ſuppoſe that Money by way of *Tax*, be taken from one who ſpendeth the ſame in ſuperfluous eating and drinking; and delivered to another

whatſhifting of Money from hand is profitable or not.

who employeth the ſame, in improving of *Land*, in *Fiſhing*, in working of *Mines*, in *Manufacture*, &c. It is manifeſt, that ſuch Tax is an advantage to the State whereof the ſaid different Perſons are Members: Nay, if Money be taken from him, who ſpendeth the ſame as aforeſaid upon *eating* and *drinking*, or any other periſhing Commodity; and the ſame transferred to one that beſtoweth it on *Cloaths*; I ſay, that even in this caſe, the Commonwealth hath ſome little advantage; becauſe *Cloaths* do not altogether periſh ſo ſoon as *Meats* and *Drinks*: But if the ſame be ſpent in *Furniture of Houſes*, the advantage is yet a little more; if in *Building of Houſes*, yet more; if in improving of *Lands*; working of *Mines*, *Fiſhing*, &c. yet more; but moſt of all, in bringing *Gold* and *Silver* into the Country: Becauſe thoſe things are not only not periſhable, but are eſteemed for Wealth at all times, and every where: whereas other Commodities which are periſhable, or whoſe value depends upon the Faſhion; or which are contingently ſcarce and plentiful, are Wealth, but *pro hic & nunc*, as ſhall be elſewhere ſaid.

In

In the next place if the People of any Country, who have not already a full Employment, ſhould be enjoyned or taxed to work upon ſuch Commodities as are imported from abroad; I ſay, that ſuch a Tax, alſo doth improve the Commonwealth. *Taxing of new Works a benefit to the Commonwealth.*

Moreover, if Perſons who live by begging, cheating, ſtealing, gaming, borrowing without intention of reſtoring; who by thoſe ways do get from the credulous and careleſs, more than is ſufficient for the ſubſiſtence of ſuch Perſons; I ſay, that although the State ſhould have no preſent Employment for ſuch Perſons, and conſequently ſhould be forced to bear the whole charge of their livelihood; yet it were more for the publick profit to give all ſuch Perſons, a regular and competent allowance by publick Tax, than to ſuffer them to ſpend extravagantly, at the only charge of careleſs, credulous, and good natured People: And to expoſe the Commonwealth to the loſs of ſo many able Men, whole Lives are taken away, for the Crimes which ill Diſcipline doth occaſion. *The Taxing of Idlers.*

On

On the contrary, If the Stocks of laborious and ingenious Men, who are not only beautifying the Country where they live by elegant *Dyet*, *Apparel*, *Furniture*, *Houſing*, *pleaſant Gardens*, *Orchards*, and *publick Edifices*, &c. But are alſo increaſing the *Gold*, *Silver*, and *Jewels* of the Country by *Trade* and *Arms*; I ſay, if the Stock of theſe Men ſhould be diminiſhed by a Tax, and transferred to ſuch as do nothing at all, but *Eat* and *Drink*, *Sing*, *Play*, and *Dance*; nay, to ſuch as Study the *Metaphyſicks*, or other needleſs *Speculation*; or elſe employ themſelves in any other way, which produce no material thing, or things of real uſe and value in the Commonwealth: In this caſe, the Wealth of the Publick will be diminiſhed: Otherwiſe than as ſuch Exerciſes, are Recreations and Refreſhments of the mind; and which being moderately uſed, do qualifie and diſpoſe Men to what in it ſelf is more conſiderable.

Wherefore upon the whole matter, to know whether a Tax will do good or harm: The State of the People and their Employments, muſt be well known; (that is to ſay,) what part of the Peo-

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ple are unfit for Labour by their Infancy or Impotency; and alſo what part are exempt from the ſame, by reaſon of their *Wealth*, *Function*, or *Dignities*; or by reaſon of their Charge and Employments; otherwiſe than in governing, directing and preſerving thoſe, who are appointed to Labour and Arts.

2. In the next place Computation muſt be made, what part of thoſe who are fit for Labour and Arts as aforeſaid, are able to perform the Work of the Nation in its preſent State and Meaſure.

3. It is to be conſidered, whether the remainder can make all or any part of thoſe Commodities, which are imported from abroad; which of them, and how much in particular: The remainder of which ſort of People (if any be) may ſafely and without poſſible prejudice to the Commonwealth, be employed in the Arts and Exerciſes of Pleaſure and Ornament; the greateſt whereof is the Improvement of natural Knowledge. *A judgment of what Taxes are advantageous.*

Having thus in general illuſtrated this Point, which I think needs no other proof but illuſtration; I come next to intimate that no part of *Europe* hath paid

paid ſo much by way of Tax, and publick Contributions, as *Holland* and *Zealand* for this laſt 100 Years; and yet no Country hath in the ſame time, increaſed their Wealth comparably to them: And it is manifeſt, they have followed the general Conſiderations above-mentioned; for they Tax *Meats* and *Drinks* moſt heavily of all; to reſtrain the exceſſive Expence of thoſe things, which Twenty Four Hours doth (as to the uſe of Man) wholly annihilate; and they are more favourable to Commodities of greater duration.

Nor do they Tax according to what Men gain, but in extraordinary Caſes; but always according to what Men ſpend: And moſt of all, according to what they ſpend needleſly, and without proſpect of return. Upon which Grounds, their Cuſtoms upon Goods imported and exported, are generally low; as if they intended by them, only to keep an account of their Foreign Trade; and to retaliate upon their Neighbour States, the prejudices done them, by their Prohibitions and Impoſitions.

It is probable that Holland *and* England *are grown richer under Taxes.*

It is further to be obſerved, that ſince the Year 1636, the Taxes and publick Levies

Levies made in *England*, *Scotland*, and *Ireland*, have been prodigiouſly greater than at any time heretofore; and yet the ſaid Kingdoms have increaſed in their Wealth and Strength for theſe laſt Forty Years, as ſhall hereafter be ſhewn.

The difference of Princes Revenues.

It is ſaid that the King of *France*, at preſent doth Levy the Fifth Part of his Peoples Wealth; and yet great Oſtentation is made of the Preſent Riches and Strength of that Kingdom. Now great care muſt be had in diſtinguiſhing between the Wealth of the People, and that of an abſolute Monarch; who taketh from the People, where, when, and in what proportion he pleaſeth. Moreover, the Subjects of two Monarchs may be equally Rich, and yet one Monarch may be double as Rich as the other; *viz.* If one take the tenth part of the Peoples Subſtance to his own diſpoſe, and the other but the twentieth, may the Monarch of a poorer People, may appear more ſplendid and glorious, than that of a Richer; which perhaps may be ſomewhat the caſe of *France*, as hereafter ſhall be examined. As an inſtance and application of what hath been ſaid,

I con-

I conceive that in *Ireland* wherein are about Twelve hundred thousand People and near Three hundred thousand Smokes or Hearths; It were more tolerable for the People, and more profitable for the King, that each Head paid two Shillings worth of Flax, than that each smoke should pay two Shillings in Silver; And that for the following reasons.

That Ireland may be more advantageously taxed by a Pole in Flax,

1. *Ireland* being under peopled, and Land, and Cattle being very cheap; there being every where store of Fish and Fowl; the ground yielding excellent Roots (and particularly that bread-like root *Potatoes*) and withal they being able to perform their Husbandry, with such Harness and Tackling, as each Man can make with his own hands; and living in such Houses as almost every Man can build; and every House-wife being a Spinner and Dyer of Wool and Yarn, they can live and subsist after their present Fashion, without the use of Gold or Silver Money; and can supply themselves with the necessaries above-named, without labouring two Hours *per diem*: Now it hath been found, that by reason of Insolvencies arising, rather from the

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uſeleſneſs than want of Money among theſe poor People; that from Three hundred thouſand Hearths, which ſhould have yielded Thirty thouſand Pound *per annum*; not Fifteen thouſand Pound of Money could be Levyed: Whereas it is eaſily imagined, that four or five People dwelling in that Cottage, which hath but one ſmoke; could eaſily have planted a ground-plot of about forty Foot ſquare with Flax; or the fiftieth part of an Acre; for ſo much ground will bear eight or ten Shillings worth of that Commodity; and the Rent of ſo much ground, in few places amounts to a penny *per annum*, nor is there any Skill requiſite to this Practice, wherewith the Country is not already familiar. Now as for a Market for the Flax; there is Imported into *Holland* it ſelf, over and above what that Country produces; as much Flax, as is there ſold for between Eightſcore and Two hundred thouſand Pound; and into *England* and *Ireland* is Imported as much Linnen Cloth made of Flax, and there ſpent, as is worth above one half Million of Money. As ſhall hereafter be ſhewn.

Where-

Wherefore having ſhewn, that Silver Money is uſeleſs to the poor People of *Ireland*, that half the Hearth Money could not be raiſed by reaſon thereof; that the People are not a fifth part employed; that the People and Land of *Ireland*, are competently qualified for Flax; that one Penny-worth of Land, will produce Ten Shillings worth of the ſame; and that there is Market enough and enough, for above an Hundred thouſand Pounds worth; I conceive my Propoſition ſufficiently proved; at leaſt to ſet forwards and promote a Practice, which both the preſent Law and Intereſt of the Countrey doth require: Eſpecially, ſince if all the Flax ſo produced ſhould yield nothing, yet there is nothing loſt; the ſame time having been worſe ſpent before. Upon the ſame grounds, the like Tax of two Shillings *per* Head, may be raiſed with the like advantage upon the People of *England*; which will amount to Six hundred thouſand Pound *per annum*; to be paid in Flax, Manufactured, into all the ſorts of *Linnens*, *Threds*, *Tapes*, and *Laces*; which we now receive from *France*, *Flanders*, *Holland*, and *Germany*; the value whereof doth far exceed the

the ſum laſt mentioned, as hath appeared by the examination of particulars.

It is obſerved by Clothiers, and others, who employ great numbers of poor people, that when Corn is extremely plentiful, that the Labour of the poor is proportionably dear: And ſcarce to be had at all (ſo licentious are they who labour only to eat, or rather to drink.) Wherefore when ſo many Acres ſown with Corn, as do uſually produce a ſufficient ſtore for the Nation, ſhall produce perhaps double to what is expected or neceſſary; it ſeems not unreaſonable that this common bleſſing of God, ſhould be applied, to the common good of all People, repreſented by their Sovereign; much rather than the ſame ſhould be abuſed, by the vile and brutiſh part of mankind, to the prejudice of the Common-Wealth: And conſequently, that ſuch ſurpluſage of Corn, ſhould be ſent to publick Store-Houſes; from thence to be diſpoſed of, to the beſt advantage of the Publick.

Duties put upon redundant Commodities may be a harmleſs Tax.

Now if the Corn ſpent in *England*, at five ſhillings *per* Buſhel *Wheat*, and two ſhillings ſix pence *Barley*, be worth ten Millions *Communibus annis*; it follows that in years of great plenty, when the ſaid

Grains are one third part cheaper; that a vaſt advantage might accrue to the Common-Wealth, which now is ſpent in overfeeding of the People, in quantity or quality; and ſo indiſpoſing them to their uſual Labour.

The like may be ſaid of *Sugar*, *Tobacco*, and *Pepper*; which Cuſtom hath now made neceſſary to all ſorts of People; and which the over-planting of them, hath made unreaſonably cheap: I ſay it is not abſurd, that the Publick ſhould be advantaged by this extraordinary plenty.

That an *Exciſe* ſhould be laid upon *Corrants* alſo, is not unreaſonable; not only for this, but for other reaſons alſo.

Of a Tax by a grand Militia, and by two other ſorts of Armies.

The way of the preſent Militia or Trained-Bands, is a gentle Tax upon the Country; becauſe it is only a few days Labour in the year, of a few Men in reſpect of the whole; uſing their own Goods, that is their own Arms. Now if there be three Millions of Males in *England*, there be above two hundred thouſand of them, who are between the age of ſixteen and thirty, unmarried Perſons; and who live by their Labour and Service; for of ſo many or thereabouts, the preſent Militia conſiſts. Now

Now if an hundred and fifty thouſand of theſe, were Armed, and Trained, as Foot; and fifty thouſand as Horſe; (Horſe being of ſpecial advantage in Iſlands) the ſaid Forces at Land, with thirty thouſand Men at Sea; would by Gods ordinary bleſſing, defend this Nation, being an Iſland, againſt any Force in view: But the Charge of Arming, Diſciplining, and Rendezvouſing all theſe Men, twice, or thrice a year; would be a very gentle Tax, Levyed by the People themſelves, and paid to themſelves. Moreover if out of the ſaid number one third part were ſelected, of ſuch as are more than ordinarily fit and diſpoſed for War, and to be Exerciſed, and Rendezvouſed fourteen or fifteen times *per annum*; the Charge thereof being but a Fortnights Pay in the Year, would be alſo a very gentle Tax.

Laſtly, If out of this laſt mentioned number, one third again ſhould be ſelected, making about ſixteen thouſand Foot, and near ſix thouſand Horſe, to be Exerciſed, and Rendezvouſed forty Days in the Year; I ſay that the Charge of all theſe three Militias, allowing the latter ſix Weeks Pay *per annum*; would not coſt above one hundred and twenty thouſand

Pound *per annum*; which I take to be an easie burthen, for so great a benefit.

For supplying the Navy, and Merchants with Seamen.

Forasmuch as the present Navy of *England* requires thirty six thousand Men to Man it; and for that the *English* Trade of Shipping, requires about forty eight thousand Men, to manage it also; it follows, that to perform both well, there ought to be about seventy two thousand Men, (and not eighty four thousand) competently qualified for these Services: For want whereof we see, that it is a long while, before a Royal Navy can be manned; which till it be, is of no effectual use, but lies at Charge. And we see likewise upon these occasions, that Merchants are put to great straights, and inconveniences; and do pay excessive rates for the carrying on their Trade. Now if twenty four thousand able bodyed Tradesmen, were by six thousand of them *per annum*, brought up and fitted for Sea-Service; and for their incouragement allowed 20 *s. per annum* for every year they had been at Sea, even when they stay at Home, not exceeding 6 *l.* for those. who have served six years or upward; it follows, that about 72000 *l.* at the *medium* of 3 *l. per* Man, would Salariate the whole number of

of twenty four thouſand ; and ſo, foraſmuch as half the Seamen, which manage the Merchants Trade, are ſuppoſed to be always in Harbour, and are about twenty four thouſand Men, with the ſaid half together of the Auxiliaries laſt mentioned, would upon all emergencies, Man out the whole *Royal Navy* with thirty ſix thouſand, and leaving to the Merchants twelve thouſand of the abler Auxiliaries, to perform their buſineſs in Harbour, till others come Home from Sea ; and thus thirty ſix thouſand, twenty four thouſand, and twelve thouſand, make the ſeventy two thouſand above-mentioned: I ſay that more than this ſum of 72000 *l.* is fruitleſly ſpent, and over paid by the Merchants, whenſoever a great Fleet is to be fitted out. Now thoſe whom I call Auxiliary Seamen, are ſuch as have another Trade beſides, wherewith to maintain themſelves, when they are not employed at Sea ; and the charge of maintaining them, though 72000 *l. per annum*, I take to be little or nothing, for the Reaſons above-mentioned, and conſequently an eaſie Tax to the People, becauſe Levied by, and paid to themſelves.

A Herring Tax upon Scotland.

As we propounded that *Ireland* ſhould be Taxed with Flax, and *England* by *Linnen*, and other *Manufacture* of the ſame; I conceive that *Scotland* alſo might be Taxed as much, to be paid in *Herrings*, as *Ireland* in *Flax*: Now the three Taxes, *viz.* of *Flax*, *Linnen*, and *Herrings*, and the maintenance of the triple *Militia*, and of the *Auxiliary Seamen* above-mentioned, do all five of them together, amount to one Million of Money, the raiſing whereof is not a Million ſpent, but gain unto the Common-Wealth, unleſs it can be made appear, that by reaſon of all, or any of them, the Exportation of *Woollen Manufactures*, *Lead* and *Tin*, are leſſened; or of ſuch Commodities, as our own *Eaſt* and *Weſt-India* Trade do produce, foraſmuch as I conceive, that the Exportation of theſe laſt mentioned Commodities, is the *Touch-Stone* whereby the Wealth of *England* is tryed, and the *Pulſe* whereby the Health of the Kingdom may be diſcerned.

CHAP.

CHAP. III.

That France *cannot by reaſon of natural, and perpetual Impediments, be more powerful at Sea, than the* Engliſh, *or* Hollanders *now are, or may be.*

POwer at Sea conſiſts chiefly of *Men able to fight at Sea*, and that in ſuch Shipping, as is moſt proper for the Seas wherein they ſerve; and thoſe are in theſe Northern Seas, Ships from between three hundred to one thouſand three hundred Tuns; and of thoſe ſuch as draw much Water, and have a deep Latch in the Sea, in order to keep a good Wind, and not to fall to Leeward, a matter of vaſt advantage in Sea Service: Wherefore it is to be examined, 1. Whether the King of *France*, hath Ports in the Northern Seas (where he hath moſt occaſion for his Fleets of War, in any conteſts with *England*)

The qualities of Ships fit for the defence of England.

able to receive the Veſſels above-mentioned, in all Weathers, both in Winter and Summer Seaſon. For if the King of *France*, would bring to Sea an equal number of fighting Men, with the *Engliſh* and *Hollanders*, in ſmall floaty Leeward Veſſels, he would certainly be of the weaker ſide. For a Veſſel of one thouſand Tuns manned with five hundred Men, fighting with five Veſſels of two hundred Tuns, each manned with one hundred Men apiece, ſhall in common Reaſon have the better offenſively, and defenſively; foraſmuch as the great Ship can carry ſuch Ordnance, as can reach the ſmall ones at a far greater diſtance, than thoſe can reach, or at leaſt hurt the other; and can Batter, and ſink at a diſtance, when ſmall ones can ſcarce pierce.

Moreover it is more difficult for Men out of a ſmall Veſſel, to enter a tall Ship, than for Men from a higher place, to leap down into a lower; nor is ſmall Shot ſo effectual upon a tall Ship, as *vice verſa*.

And

And as for Veſſels drawing much Water, and conſequently keeping a good Wind, they can take or leave Leeward Veſſels, at pleaſure, and ſecure themſelves from being Boarded by them: Moreover the Windward Ship, has a fairer mark at a Leeward Ship, than *vice verſa*; and can place her Shot upon ſuch parts of the Leeward Veſſel, as upon the next Tack will be under Water.

Now then the King of *France*, having no Ports able to receive large Windward Veſſels, between *Dunkirk* and *Uſhant*, what other Ships he can bring into thoſe Seas, will not be conſiderable. As for the wide Ocean, which his Harbours of *Breſt*, and *Charente*, do look into; it affordeth him no advantage upon an Enemy; there being ſo great a Latitude of engaging or not, even when the Parties are in ſight of each other.

Wherefore, although the King of *France* were immenſely Rich, and could Build what Ships he pleaſed, both for number, and quality; yet if he have not Ports to receive, and ſhelter, that ſort and ſize of Shipping, which is fit for

for his purpoſe; the ſaid Riches will in this caſe be fruitleſs, and a mere expence without any return, or profit. Some will ſay that other Nations cannot Build ſo good Ships as the *Engliſh*, I do indeed hope they cannot; but becauſe it ſeems too poſſible, that they may ſooner or later, by Practice and Experience; I ſhall not make uſe of that Argument, having bound my ſelf to ſhew, that the impediments of *France*, (as to this purpoſe) are natural, and perpetual. Ships and Guns do not fight of themſelves, but Men who act and manage them; wherefore it is more material to ſhew; That the King of *France*, neither hath, nor can have Men ſufficient, to Man a Fleet, of equal ſtrength to that of the King of *England*, *viz.*

The qualifications of Seamen for defence.

The King of *England*'s Navy, conſiſts of about ſeventy thouſand Tuns of Shipping, which requires thirty ſix thouſand Men to Man it; theſe Men being ſuppoſed to be divided into eight parts, I conceive that one eighth part, muſt be Perſons of great Experience, and Reputation, in Sea Service: another eighth part muſt be ſuch as have uſed

uſed the Sea ſeven years and upwards; half of them, or four eighth parts more, muſt be ſuch as have uſed the Sea above a Twelvemonth, *viz.* Two, three, four, five, or ſix years, allowing but one quarter of the whole Complements, to be ſuch as never were at Sea at all, or at moſt but one Voyage, or upon one Expedition; ſo that at a *medium* I reckon, that the whole Fleet muſt be Men of three or four years growth, one with another. *Fournier*, a late judicious Writer, making it his buſineſs to perſuade the World, how conſiderable the King of *France* was, or might be at Sea, in the ninety ſecond and ninety third Pages of his *Hydrography*, ſaith, That there was one place in *Britany*, which had furniſhed the King with one thouſand four hundred Seamen, and that perhaps the whole Sea-Coaſt of *France*, might have furniſhed him with fifteen times as many: Now ſuppoſing his whole Allegation were true, yet the ſaid number amounts but to twenty one thouſand; all which, if the whole Trade of Shipping in *France* were quite and clean abandoned, would not by above a third, Man out a Fleet equivalent, to that of the King of *England*: And if

The Number of Seamen in France.

if the Trade were but barely kept alive, there would not be one third part Men enough, to Man the ſaid Fleet.

But if the Shipping Trade of *France*, be not above a quarter as great as that of *England*, and that one third part of the ſame, namely the Fiſhing Trade to the Banks of *Newfoundland*, is not peculiar, nor fixt to the *French*; then I ſay that if the King of *England* (having power to Preſs Men) cannot under two or three Months time Man his Fleet; than the King of *France*, with leſs than a quarter of the ſame help, can never do it at all; for in *France* (as ſhall elſewhere be ſhewn) there are not above one hundred and fifty thouſand Tun of Trading Veſſels, and conſequently no above fifteen thouſand Seamen, reckoning a Man to every ten Tun. As it has been ſhewn that the King of *France*, cannot at preſent Man ſuch a Fleet, as is above deſcribed, we come next to ſhew that he never can. being under natural, and perpetual Impediments: *viz.* 1. If there be but fifteen thouſand Seamen in all *France*, to manage its Trade, it is not to be ſuppoſed,

ppoſed, that the ſaid Trade ſhould be
xtinguiſhed, nor that it ſhould ſpare a-
ove Five of the ſaid Fifteen Thouſand
wards manning the Fleet which requires
hirty Five Thouſand.

Now the deficient Thirty Thouſand
uſt be ſupplied, one of theſe four
ays, either, firſt by taking in Land-
en, of which ſort there muſt not be
ove Ten Thouſand, ſince the Sea-men
ill never be contented, without being
e *major* part, nor do they heartily
iſh well to Land-men at all, or rejoyce
en at thoſe Succeſſes, of which the
nd-men can claim any ſhare; thinking
hard that themſelves, who are bred
miſerable, painful, and dangerous
mployments, (and yet profitable to
e Commonwealth) ſhould at a time
hen Booty and Purchaſe is to be got-
n, be clogged or hindered by any con-
nction with Land-men, or forced to
dmit thoſe to an equal Share with
emſelves. 2. The Sea-men which we
ppoſe Twenty Thouſand, muſt be had,
at is hired from other Nations, which
nnot be without tempting them with
much Wages, as exceeds what is
given

The ways whereby the French *muſt increaſe Sea-men.*

Why Sea-men diſlike Land-men.

given by Merchants, and withal to coun-
terpoiſe the danger of being hange
by their own Prince, and allowed n
Quarter if they are taken; the trou
ble of conveying themſelves away, whe
Reſtraints and Prohibitions are upo
them; and alſo the infamy of havin
been Apoſtates, to their own Coun
trey and Cauſe: I ſay their Wages mu
be more than double, to what the
own Prince gives them, and their a
ſurance muſt be very great, that the
ſhall not be at long run abuſed o
ſlighted by thoſe who employed them
(as hating the Traitor, although the
love the Treaſon.) I ſay moreove
that thoſe who will be thus tempte
away, muſt be of the baſeſt, and lewd
eſt ſort of Sea-men, and ſuch as hav
not enough of Honour and Conſci
ence, to qualifie them for any Truſt
or gallant Performance. 3. Anothe
way to increaſe Sea-men, is to put grea
Numbers of Land-men upon Ships o
War, in order to their being Sea-men
but this courſe cannot be effectual, no
only for the above-mentioned Antipa
thy, between Land-men and Sea-men

The danger of Engliſh *Sea-men their ſerving the* French

How Men learn to be good Sea-men.

bu

but alſo, becauſe it is ſeen, that Men at Sea do not apply themſelves to Labour and Practice, without more neceſſity than happens in over-manned Shipping. For where there are Fifty Men in a Veſſel, that Ten can ſufficiently Navigate, the ſupernumerary Forty will improve little; but where there ſhall be of Ten but One or Two ſupernumeraries, there neceſſity will often call upon every Man to ſet his Hand to the Work, which muſt be well done at the peril of their own Lives. Moreover, Sea-men ſhifting Veſſels almoſt every Six or Twelve Months, do ſometimes ſail in ſmall Barks, ſometimes in middling Ships, and ſometimes in great Veſſels of Defence: ſometimes in Lighters, ſometimes in Hoys, ſometimes in Ketches, ſometimes in Three-maſted Ships, ſometimes they go to the Southward, ſometimes to the Northward, ſometimes they Coaſt, ſometimes they croſs the Ocean; by all which variety of Service, they do in time compleat themſelves, in every Part, and Circumſtance of their Faculty: Whereas thoſe who go out for a Summer,

met, in a Man of War, have not that variety of Practice, nor a direct neceſſity of doing any thing at all.

Beſides, it is three or four Years at a *medium*, wherein a Sea-man muſt be made; neither can there be leſs than Three Sea-men, to make a Fourth of a Land-man: Conſequently the Fifteen Thouſand Sea-men of *France*, can increaſe but Five Thouſand Sea-men in Three or Four Years, and unleſs their Trade ſhould increaſe with their Sea-men in proportion, the King muſt be forced to bear the Charge of this improvement, out of the publick Stock, which is intolerable. So as the Queſtion which now remains, is, whether the Shipping Trade of *France* is like to increaſe? Upon which account it is to be conſidered, 1. That *France* is ſufficiently ſtored with all kind of Neceſſaries within it ſelf; as with *Corn*, *Cattel*, *Wine*, *Salt*, *Linnen-Cloth*, *Paper*, *Silk*, *Fruits*, &c. So as they need little Shipping, to import more Commodities of Weight or Bulk; neither is there any thing of Bulk exported out of *France*, but *Wines* and *Salt*; the weight where-

Whether the Shipping Trade of France is like to increaſe.

of

of is under One Hundred Thouſand Tun *per Annum*, yielding not Employment to above Twenty Five Thouſand Tun of Shipping, and theſe are for the moſt part *Dutch* and *Engliſh*, who are not only already in Poſſeſſion of the ſaid Trade, but alſo are better fitted to maintain it, than the *French* are, or perhaps ever can be: And that for the following Reaſons. (*viz.*) 1. Becauſe the *French* cannot Victual ſo cheap as the *Engliſh* and *Dutch*, nor Sail with ſo few Hands. 2. The *French* for want of good Coaſts and Harbours, cannot keep their Ships in Port, under double the Charge that the *Engliſh* and *Hollanders* can. 3. By reaſon of paucity, and diſtance of their Ports one from another, their Sea-men and Tradeſmen relating to Shipping, cannot Correſpond with, and Aſſiſt one another ſo eaſily, cheaply, and advantageouſly, as in other places. Wherefore if their Shipping Trade is not likely to increaſe within themſelves, and much leſs to increaſe, by their beating out the *Engliſh* and *Hollanders* from being the Carriers of the World, it fol-

Reaſons why it cannot.

lows, that their Sea-men will not be increaſed by the increaſe of their ſaid Trade: Wherefore, and for that they are not like to be increaſed by any of the ſeveral ways above ſpecified, and for that their Ports are not fit to receive Ships of Burthen and Quality, fit for that purpoſe; and that by reaſon of the leſs fitneſs of their Ports, than that of their Neighbours; I conceive that what was propounded, hath been competently proved.

The aforenamed *Fournier* in the Ninety Second and Ninety Third Pages of his *Hydrography*, hath laboured to prove the contrary of all this, unto which I refer the Reader: Not thinking his Arguments of any weight at all in the preſent caſe. Nor indeed doth he make his Compariſons with the *Engliſh* or *Hollanders*, but with the *Spaniards*, who, nor the *Grand Seignior*, (the latter of whom hath greater Advantages, to be powerful at Sea, than the King of *France*) could ever attain to any illuſtrious Greatneſs in Naval Power: Having often attempted, but never ſucceeded in the ſame.

Nor

Nor is it eaſie to believe, that the King of *England* ſhould for ſo many Years, have continued his Title to the *Sovereignty* of the *Narrow Seas*, againſt his Neighbours (ambitious enough to have gotten it from him) had not their Impediments been natural, and perpetual, and ſuch, as we ſay, do obſtruct the King of *France*.

CHAP. IV.

That the People and Territories of the King of England, *are naturally near as considerable for Wealth and Strength, as those of* France.

Of comparison between the Territories of England *&* France.

THE Author of the State of *England*, among the many useful Truths, and Observations he hath set down; delivers the proportion, between the Territories of *England* and *France*, to be as Thirty to Eighty Two; the which if it be true, then *England*, *Scotland*, and *Ireland*, with the Islands unto them belonging, will, taken all together, be near as big as *France*. Tho' I ought to take all Advantages for proving the Paradox in hand; yet I had rather grant that *England*, *Scotland*, and *Ireland*, with the Islands before-mentioned; together with the planted Parts of *Newfoundland*, *New-England*, *New-Netherland*, *Virginia*, *Mary-land*, *Carolina*, *Jamaica*, *Burmoudas*, *Barbadoes*, and all the rest

reſt of the *Carribby* Iſlands, with what the King hath in *Aſia* and *Africa*, do not contain ſo much *Territory* as *France*, and what planted Land the King of *France* hath alſo in *America*. And if any Man will be Heterodox in behalf of the *French* Intereſt; I would be contented againſt my Knowledge and Judgment, to allow the King of *France*'s *Territories*, to be a ſeventh, ſixth, or even a fifth greater than thoſe of the King of *England*; believing that both Princes have more Land than they do employ to its utmoſt uſe.

A propoſition for quitting Ireland & the High-Lands of Scotland.

And here I beg leave, (among the ſeveral matters which I intend for ſerious) to interpoſe a jocular, and perhaps ridiculous digreſſion, and which I indeed deſire Men to look upon, rather as a Dream or Reſvery, than a rational Propoſition; the which is, that if all the *moveables* and People of *Ireland*, and of the *Highlands* of *Scotland*, were tranſported into the reſt of *Great Britain*; that then the King and his Subjects would thereby become more *Rich* and *Strong*, both *offenſively* and *defenſively*, than now they are.

'Tis true, I have heard many Wise Men say, when they were bewailing the vast Losses of the *English*, in preventing and suppressing Rebellions in *Ireland*, and considering how little Profit hath returned, either to the King or Subjects of *England*, for their Five Hundred Years doing and suffering in that Countrey; I say, I have heard Wise Men (in such their Melancholies) wish, that (the People of *Ireland* being saved) *Island* were sunk under water: Now it troubles me, that the Distemper of my own Mind in this Point, carries me to dream, that the benefit of those Wishes, may practically be obtained, without sinking that vast mountainous Island under Water, which I take to be somewhat difficult; for although *Dutch* Engineers may drain its Bogs; yet I know no Artists that could sink its Mountains. If Ingenious and Learned Men (among whom I reckon Sir *Tho. More*, and *Des Cartes*) have disputed, That we who think our selves awake, are, or may be really in a Dream; and since the greatest absurdities of Dreams, are but a prepostrous and tumultuary contexture of Realities, I will crave the umbrage

brage of theſe great Men laſt named, to ſay ſomething for this wild Conception, with ſubmiſſion to the better Judgment of all thoſe that can prove themſelves awake.

If there were but one Man living in *England*, then the Benefit of the whole Territory, could be but the livelihood of that one Man: But if another Man were added, the Rent or Benefit of the ſame would be double, if Three, triple; and ſo forward until ſo many Men were planted in it, as the whole Territory could afford Food unto: For if a Man would know, what any Land is worth, the true and natural Queſtion muſt be, How many Men will it feed? How many Men are there to be fed? But to ſpeak more practically, Land of the ſame Quantity and Quality in *England*, is generally worth Four or Five times as much as in *Ireland*; and but one quarter, or third of what it is worth in *Holland*; becauſe *England* is four or five times better peopled than *Ireland*, and but a quarter ſo well as *Holland*. And moreover, where the Rent of Land is advanced by reaſon of multitude of People; there the number of Years purchaſe, for which

the Inheritance may be ſold, is alſo advanced, though perhaps not in the very ſame Proportion; for 20 *s. per Annum* in *Ireland*, may be worth but 8 *l.* and in *England* where Titles are very ſure, above 20 *l.* in *Holland* above 30 *l.*

I ſuppoſe, that in *Ireland* and the *Highlands* in *Scotland*, there may be about one Million and Eight Hundred Thouſand People, or about a Fifth Part of what is in all the Three Kingdoms: Wherefore the firſt Queſtion will be, Whether *England*, *Wales*, and the *Low-Lands* of *Scotland*, cannot afford Food, (that is to ſay) *Corn*, *Fiſh*, *Fleſh*, and *Fowl*, to a Fifth Part more People, than are at the preſent planted upon it, with the ſame Labour that the ſaid Fifth Part do now take where they are? For if ſo, then what is propounded is naturally poſſible. 2. It is to be enquired, What the *value* of the *immovables* (which upon ſuch removal muſt be left behind) are worth? For if they be worth leſs, than the advancement of the Price of Land in *England* will amount unto; then the propoſal is to be conſidered. 3. If the *Relict Lands* and the *immovables* left behind upon them, may be

ſold

ſold for Money; or if no other Nation ſhall dare meddle with them, without paying well for them; and if the Nation who ſhall be admitted, ſhall be leſs able to prejudice and annoy the Tranſplantees into *England* than before; then I conceive that the whole propoſal will be a pleaſant and a profitable Dream indeed.

That England *and the Low-Lands of* Scotland *will feed all the People of* England, Scotland, *and* Ireland.

As to the firſt Point, whether *England*, and the Low-lands of *Scotland*, can maintain a Fifth Part more People than they now do (that is to ſay) Nine Millions of Souls in all? For anſwer thereunto, I firſt ſay, that the ſaid Territories of *England*, and the Low-Land of *Scotland*, contain about Thirty Six Millions of Acres, that is four Acres for every Head, Man, Woman, and Child; but the United Provinces do not allow above One Acre and a Half, and *England* it ſelf reſcinding *Wales*, hath but Three Acres to every Head, according to the preſent State of Tillage and Husbandry. Now if we conſider that *England* have but Three Acres to a Head as aforeſaid, doth ſo abound in Victuals, as that it maketh Laws againſt the Importation of *Cattel*, *Fleſh*,

Fleſh, and *Fiſh* from abroad; and that the draining of *Fens*, improving of *Foreſts*, incloſing of *Commons*, Sowing of St. *Foyne* and *Clovergraſs*, be grumbled againſt by *Landlords*, as the way to depreſs the Price of Victuals; then it plainly follows, that leſs than Three Acres improved as it may be, will ſerve the turn, and conſequently that Four will ſuffice abundantly. I could here ſet down the very number of Acres, that would bear *Bread* and *Drink*, *Corn*, together with *Fleſh*, *Butter*, and *Cheeſe*, ſufficient to victual Nine Millions of Perſons, as they are victualled in Ships, and regular Families; but ſhall only ſay in general; that Twelve Millions of Acres, *viz.* one Third of Thirty Six Millions, will do it, ſuppoſing that *Roots*, *Fruits*, *Fowl*, and *Fiſh*, and the ordinary profit of *Lead*, *Tin*, *Iron-Mines*, and *Woods*, would piece up any defect, that may be feared.

That the value of all the quitted Lands & immovable goods & charge of tranſplantation are not to the above 17 Millions.

As to the ſecond, I ſay, that the Land and Houſing in *Ireland*, and the High-Lands of *Scotland*, at the preſent Market Rates, are not worth Thirteen Millions of Money; nor would the actual Charge of making the Tranſplantation propoſed, amount to Four Millions more: So

So then the Queſtion will be, Whether the benefit expected from this tranſplantation, will exceed Seventeen Millions?

To which I ſay, that the Advantage will probably be near four times the laſt mentioned ſumm, or about Sixty Nine Millions, Three Hundred Thouſand Pounds. For if the Rent of all *England* and *Wales*, and the Low-Lands of *Scotland*, be about Nine Millions *per Annum*; and if the Fifth Part of the People be ſuperadded, unto the preſent Inhabitants of thoſe Countries; then the Rent will amount unto Ten Millions 8000*l.* and the number of Years purchaſe, will riſe from Seventeen and a half, to a Fifth Part more, which is Twenty One. So as the Land which is now worth but Nine Millions *per Annum*, at Seventeen and a half Years purchaſe, making 157 Millions and a half, will then be worth Ten Millions Eight Hundred Thouſand Pounds, at Twenty One Years purchaſe; *viz.* Two Hundred Twenty Six Millions, and Eight Hundred Thouſand Pounds, that is Sixty Nine Millions, and Three Hundred Thouſand Pounds more than it was before.

And

That those who purchase Ireland shall weaken themselves.

And if any Prince willing to inlarge his Territories, will give any thing more than Six and a half Millions or half the present value of the said relinquished Land, which are estimated to be worth Thirteen Millions; then the whole Profit, will be above Seventy Five Millions, and Eight Hundred 600 *l.* or above four times the loss, as the same was above computed. But if any Man shall object, that it will be dangerous unto *England*, that *Ireland* should be in the Hands of any other Nation; I answer in short, that that Nation, whoever shall purchase it (being divided by means of the said purchase,) shall not be more able to annoy *England*, than now in its united Condition. Nor is *Ireland* nearer *England*, than *France* and *Flanders*.

Now if any Man shall desire a more clear explanation, how, and by what means, the Rents of Lands shall rise by this closer cohabitation of People above described; I answer, that the advantage will arise in transplanting about Eighteen Hundred Thousand People, from the poor and miserable Trade of Husbandry, to more beneficial Handicrafts: For when the superaddition is made, a very

ry little addition of Husbandry to the ſame Lands will produce a fifth part more of Food, and conſequently the additional Hands, earning but 40*s. per annum* (as they may very well do, nay to 8 *l. per annum*) at ſome other Trade; the [illegible]per-lucration will be above Three Millions and Six hundred thouſand Pounds *per annum*, which at Twenty Years Purchaſe is Seventy Millions. Moreover, as the Inhabitants of Cities and Towns, ſpend more Commodities, and make greater Conſumptions, than thoſe who live in wild thin peopled Countries; So when *England* ſhall be thicker peopled, in the manner before deſcribed, the very ſame People ſhall then ſpend more, than when they lived more ſordidly and inurbanely, and further aſunder, and more out of the ſight, obſervation, and emulation of each other; every Man deſiring to put on better Apparel when he appears in Company, than when he has no occaſion to be ſeen.

That the difference between England's *and* France's *Territory is not material.*

I further add, that the Charge of the *Government*, *Civil*, *Military*, and *Eccleſiaſtical*, would be more *cheap*, *ſafe*, and *effectual* in this condition of *cloſer* Co-habitation than otherwiſe; as not only Reaſon, but the Example of the

the United Provinces doth demonſtrate.

But to let this whole Digreſſion paſs for a *mere Dream*, I ſuppoſe 'twill ſerve to prove, that in caſe the King of *England*'s *Territories*, ſhould be a little leſs than thoſe of the King of *France*, that foraſmuch as neither of them are overpeopled, that the difference is not material to the Queſtion in Hand; wherefore ſuppoſing the King of *France*'s advantages, to be little or nothing in this point of *Territory*; we come next to examine and compare the number of Subjects which each of theſe Monarchs doth govern.

The Book called the State of *France*, maketh that Kingdom to conſiſt of Twenty ſeven thouſand Pariſhes; and another Book written by a ſubſtantial Author, who profeſſedly inquires into the State of the Church and Church-men of *France*, ſets it down as an extraordinary Caſe, that a *Pariſh* in *France* ſhould have Six hundred Souls; wherefore I ſuppoſe that the ſaid Author (who hath ſo well examined the matter) is not of Opinion that every Pariſh, one with another, hath above Five hundred; by which Reckoning the whole People of *France*, are about Thirteen Millions and a half; Now the

People

People of *England*, *Scotland*, and *Ireland*, with the Islands adjoyning, by computation from the numbers of Parishes; which commonly have more People in Protestant Churches, than in Popish Countries; as also from the *Hearth-money*, *Pole-money*, and *Excise*, do amount to about Nine Millions and an half.

There are in *New-England*, about Sixteen thousand Men Mustered in Arms; about Twenty four thousand able to bear Arms; and consequently about One hundred and fifty thousand in all: And I see no Reason why in all this and the other Plantations of *Asia*, *Africa*, and *America*, there should not be half a Million in all. But this last I leave to every Mans Conjecture; and consequently, I suppose, that the King of *England* hath about Ten Millions of Subjects, *ubivis Terrarum Orbis*; and the King of *France* about Thirteen and an half as aforesaid.

The King of France *hath in effect but Thirteen Millions of Subjects, and the King of* England *Ten Millions, and the King of* France *hath Twenty seven thousand Church-men, and the King of* England *Twenty thousand. The King of* England *hath Forty thousand Sea-men, and the King of* France *Ten thousand.*

Although

Although it be very material to know the number of Subjects belonging to each Prince, yet when the Queſtion is concerning their *Wealth* and *Strength*; It is alſo material to examin, how many of them do get more than they ſpend, and how many leſs.

In order whereunto it is to be conſidered, that in the King of *England*'s Dominions, there are not Twenty thouſand Church-men; But in *France*, as the aforementioned Author of theirs doth aver, (who ſets down the particular number of each Religious Order) there are about Two hundred and ſeventy thouſand; *viz.* Two hundred and fifty thouſand more than we think are neceſſary, (that is to ſay) Two hundred and fifty thouſand withdrawn out of the World. Now the ſaid number of adult and able bodied Perſons, are equivalent to about double the ſame number, of the promiſcuous Maſs of Mankind. And the ſame Author ſays, that the ſame Religious Perſons, do ſpend one with another about 18 *d. per diem*, which is triple even to what a labouring Man requires.

Where-

Wherefore the ſaid Two Hundred and Fifty thouſand Church-men (living as they do) makes the King of *France*'s Thirteen Millions and a half, to be leſs than Thirteen: Now if Ten Men can defend themſelves as well in Iſlands, as Thirteen can upon the Continent; then the ſaid Ten being not concerned to increaſe their *Territory* by the Invaſion of others, are as effectual as the Thirteen in point of Strength alſo; wherefore that there are more Superlucrators in the *Engliſh*, than the *French* Dominions, we ſay as followeth.

The multitude of Clergy's do leſſen the K. of France's People, the multitude of Sea and Naval Men do increaſe the King of England's Subjects.

There be in *England*, *Scotland*, *Ireland*, and the Kings other Territories above Forthy Thouſand Seamen; in *France* not above a quarter ſo many; but one Seaman earneth as much as three common Husbandmen; wherefore this difference in Seamen, addeth to the account of the King of *England*s Subjects, and is an advantage equivalent to Sixty Thouſand Husbandmen.

There are in *England*, *Scotland*, and *Ireland*, and all other the King of *England*'s Territories Six Hundred thouſand Tun of Shipping, worth about four Millions and an half of Money; and the

annual Charge of maintaining the Shipping of *England*, by new Buildings and Reparations, is about one third part of the ſame Sum; which is the Wages of one Hundred and fifty thouſand Husbandmen, but is not the Wages of above one third part of ſo many *Artiſans* as are employed, upon Shipping of all ſorts, *viz. Shiprights, Calkers, Joyners, Carvers, Painters, Block-makers, Rope-makers, Maſt-makers, Smiths* of ſeveral ſorts; *Flag-makers, Compaſs-makers, Brewers, Bakers,* and all other ſort of *Victualers*; all ſorts of Tradeſmen relating to *Guns* and *Gunners ſtores*. Wherefore there being four times more of theſe *Artiſans* in *England, &c.* than in *France*; they further add to the account of the King of *England*'s Subjects, the equivalent of Eighty thouſand Husbandmen more.

The K. of England's Territories are in effect but 12 Miles from Navigable Water, the King of France's 65.

The *Sea-line* of *England, Scotland,* and *Ireland,* and the adjacent Iſlands, is about Three thouſand eight hundred Miles; according to which length, and the whole Content of Acres, the ſaid Land would be an Oblong, or Parallelogram Figure of Three thouſand eight hundred Miles long, and about Twenty four Miles broad; and conſequently, every part of *England,*

England, *Scotland*, and *Ireland* is, one with another, but Twelve Miles from the Sea: Whereas *France*, containing but about one Thouſand Miles of *Sea-line*, is by the like method or computation, about Sixty five Miles from the Sea ſide; and conſidering the paucity of Ports, in compariſon of what are in the King of *England*'s Dominions, as good as Seventy Miles diſtant from a Port: Upon which grounds it is clear, that *England* can be ſupplied, with all groſs and bulkey Commodities of Foreign Growth and Manufacture, at far cheaper rates than *France* can be, *viz.* at about 4 *s. per Cent.* cheaper; the Land Carriage for the difference of the diſtance between *England* and *France* from a *Port*, being ſo much or near thereabouts. Now to what advantage this conveniency amounteth, upon the Importation and Exportation of bulkey Commodities, cannot be leſs than the Labour of one Million of People, *&c.* meaning by bulkey Commodities all ſorts of *Timber*, *Plank*, and *Staves* for *Cask*; all *Iron*, *Lead*, *Stones*, *Bricks*, and *Tyles* for building; all *Corn*, *Salt*, and *Drinks*; all *Fleſh* and *Fiſh*, and indeed all other Commodities, wherein the gain and loſs of 4 *s. per Cent.*

is considerable; where note that the like *Wines* are sold in the inner parts of *France* for four or five Pound a Tun, which near the Ports yield 7 *l.* Moreover upon this Principal, the decay of *Timber* in *England* is no very formidable thing, as the Rebuilding of *London*, and of the Ships wasted by the *Dutch* War do clearly manifest; nor can there be any want of Corn, or other necessary Provisions in *England*, unless the Weather hath been Universally unseasonable for the growth of the same; which seldom or never happens; for the same causes which make Dearth in one place, do often cause plenty in another; wet Weather being propitious to *Highlands*, which drowneth the *Low*.

The decay of Timber in England is no very formidable matter.

It is observed that the Poor of *France*, have generally less Wages than in *England*; and yet their Victuals are generally dearer there; which being so, there may be more Superlucration in *England* than in *France*.

The K. of England's Subjects spend near as much as the King of France's.

Lastly, I offer it to the consideration of all those, who have travelled through *England* and *France*; whether the *Plebeians* of *England* (for they Constitute the Bulk of any Nation) do not spend a sixth part

part more than the *Plebeians* of *France*? And if ſo, it is neceſſary that they muſt firſt get it; and conſequently that Ten Millions of the King of *England*'s Subjects, are equivalent to Twelve of the King of *France*'s; and upon the whole matter, to the Thirteen Millions, at which the *French* Nation was eſtimated.

The greater Splendor of the King of France, no certain argument of the greater Wealth of his People.

It will here be objected, that the ſplendor and magnificencies of the King of *France*, appearing greater than thoſe of *England*, that the Wealth of *France* muſt be proportionably greater, than that of *England*; but that doth not follow, foraſmuch as the apparent greatneſs of the King, doth depend upon the *Quota pars* of the Peoples Wealth which he Levieth from them; for ſuppoſing of the People to be equally Rich, if one of the Sovereigns Levy a fifth part, and another a fifteenth, the one ſeems actually thrice as Rich as the other, whereas potentially, they are but equal.

Compariſon of the Foreign Trade of England and France.

Having thus diſcourſed of the *Territory, People, Superlucration, and Defencibleneſs* of both *Dominions*, and in ſome meaſure of their Trade, ſo far as we had occaſion to mention *Ships, Shipping*, and nearneſs to *Ports*; we come next to in-

large a little further, upon the Trade of each.

Some have eſtimated, that there are not above Three hundred Millions of People in the whole World. Whether that be ſo or no, is not very material to be known; but I have fair grounds to conjecture, and would be glad to know it more certainly, that there are not above Eighty Millions, with whom the *Engliſh* and *Dutch* have Commerce; no *Europeans* that I know of, Trading directly nor indirectly, where they do not; ſo as the whole *Commercial World*, or *World* of *Trade*, conſiſteth of about Eighty Millions of Souls, as aforeſaid.

And I further eſtimate, that the value of all Commodities yearly exchanged amongſt them, doth not exceed the value of Forty five Millions: Now the *Wealth* of every Nation, conſiſting chiefly, in the ſhare which they have in the Foreign Trade with the whole *Commercial World*, rather than in the Domeſtick Trade, of ordinary *Meat*, *Drink*, and *Cloaths*, &c. which bringing in little *Gold*, *Silver*, *Jewels*, and other *Univerſal Wealth*; we are to conſider, whether the *Subjects* of the King of *England*, Head for Head, have

have not a greater ſhare, than thoſe of *France*.

To which purpoſe it hath been conſidered, that the Manufactures of *Wool*, yearly Exported out of *England*, into ſeveral parts of the World, *viz.* All ſorts of *Cloth*, *Serges*, *Stuffs*, *Cottons*, *Bays*, *Says*, *Frize*, *Perpetuanas*; as alſo *Stockings*, *Caps*, *Rugs*, &c. Exported out of *England*, *Scotland*, and *Ireland*, do amount unto Five Millions *per annum*.

The value of *Lead*, *Tin*, and *Coals*, to be Five hundred thouſand Pounds.

The value of all *Cloaths*, *Houſhold-ſtuff*, &c carried into *America*, Two hundred thouſand Pounds.

The value of *Silver* and *Gold*, taken from the *Spaniards* Sixty thouſand Pounds.

The value of *Sugar*, *Indico*, *Tobacco*, *Cotton*, and *Cacao*, brought from the Southward parts of *America* Six hundred thouſand Pounds.

The value of the *Fiſh*, *Pipe-ſtaves*, *Maſts*, *Bever*, &c. brought from *New-England*, and the Northern parts of *America*, Two Hundred Thouſand Pounds.

The value of the *Wool*, *Butter*, *Hides*, *Tallow*, *Beef*, *Herring*, *Pilchers*, and *Salmon*, Exported out of *Ireland*, Eight hundred thouſand Pounds.

The value of the *Coals*, *Salt*, *Linnen Yarn*, *Herrings*, *Pilchers*, *Salmon*, *Linnen-Cloth*, and *Yarn*, brought out of *Scotland*, and *Ireland*, 500000 *l.*

The value of *Saltpetre*, *Pepper*, *Callicoes*, *Diamonds*, *Drugs*, and *Silks*, brought out of the *Eaſt-Indies*, above what was ſpent in *England*; Eight hundred thouſand Pounds.

The value of the *Slaves*, brought out of *Africa*, to ſerve in our *American* Plantations Twenty thouſand Pounds; which with the *Freight* of *Engliſh Shipping*, Trading into Foreign parts, being above a Million and an half, makes in all Ten Millions one hundred and Eighty thouſand Pounds.

Which Computation is ſufficiently juſtified by the Cuſtoms of the Three Kingdoms, whoſe intrinſick value are thought to be near a Million *per annum*, *viz.* Six hundred thouſand Pounds, payable to the King; One hundred thouſand Pounds, for the Charges of Collecting, *&c.* Two hundred thouſand Pounds

ſmuggled

ſmuggled by the Merchants, and One hundred thouſand Pounds gained by the Farmers; according to common Opinion, and Mens Sayings: And this agrees alſo with that proportion, or part of the whole Trade of the World, which I have eſtimated the Subjects of the King of *England* to be poſſeſſed of, *viz.* of about Ten of Forty Five Millions.

But the value of the *French* Commodities, brought into *England*, (notwithſtanding ſome currant eſtimates,) are not above One Million two hundred thouſand Pounds *per annum*; and the value of all they Export into all the World beſides, not above Three or Four times as much; which Computation alſo agreeth well enough, with the account we have of the Cuſtoms of *France*; ſo as *France* not Exporting above one half the value of what *England* doth, and for that all the Commodities of *France* (except *Wines*, *Brandy*, *Paper*, and the firſt *Patterns* and *Faſhions* for *Cloaths*, and *Furniture* of which *France* is the Mint) are imitable by the *Engliſh*; and having withal more People than *England*; it follows that the People of *England*, &c. have Head for Head, thrice as much Foreign Trade as the People of *France*;

France; and about Two parts of Nine of the Trade of the whole *Commercial World*; and about Two parts in Seven of all the Shipping: Notwithſtanding all which it is not to be denied, that the King and ſome great Men of *France*, appear more Rich and Splendid, than thoſe of the like Quality in *England*; all which ariſes rather from the nature of their Government, than from the Intrinſick and Natural Cauſes of Wealth and Power.

CHAP.

CHAP. V.

That the Impediments of Englands *greatneſs, are but contingent and removable.*

THE firſt Impediment of *Englands* greatneſs is, that the *Territories* thereunto belonging, are too far aſunder, and divided by the Sea into many ſeveral *Iſlands* and Countries; and I may ſay, in to ſo many Kingdoms, and ſeveral Governments, (*viz.*) there be Three diſtinct Legiſlative Powers in *England*, *Scotland*, and *Ireland*; the which inſtead of uniting together, do often croſs one anothers Intereſt; putting Bars and Impediments upon one anothers Trades, not only as if they were Foreigners to each other, but ſometimes as Enemies.

The diſunion of the Territories of England *is an impediment of its greatneſs.*

The different Legiſlatures another impediment.

2. The Iſlands of *Jerſey* and *Gernſey*, and the Iſle of *Man*, are under Juriſdictions different from thoſe, either of *England*, *Scotland*, or *Ireland*.

The Colonies belonging to England *a diminution to the Empire.*

3. The

3. The Government of *New-England* (both *Civil* and *Eccleſiaſtical*) doth ſo differ from that of His Majeſty's other Dominions, that 'tis hard to ſay what may be the Conſequence of it.

And the Government of the other Plantations, doth alſo differ very much from any of the reſt; although there be not naturally ſubſtantial Reaſons from the Situation, Trade, and Condition of the People, why there ſhould be ſuch differences.

From all which it comes to paſs, that ſmall divided remote Governments, being ſeldom able to defend themſelves, the Burthen of protecting of them all, muſt lye upon the chief Kingdom *England*, and ſo all the ſmaller Kingdoms and Dominions, inſtead of being Additions, are really Diminutions; but the ſame is remedied by making Two ſuch Grand Councils, as may equally repreſent the whole Empire, one to be choſen by the King, the other by the People. The Wealth of a King is Threefold, one is the Wealth of his Subjects, the ſecond is the *Quota pars* of his Subjects Wealth, given him for the *publick Defence*, *Honour*, and *Ornament* of

of the *People*, and to manage ſuch undertaking for the Common Good, as no one or a few private Men, are ſufficient for.

The third ſort are the *Quota*, of the laſt mention *Quota pars*, which the King may diſpoſe of, as his own perſonal inclination and diſcretion ſhall direct him; without account. Now it is moſt manifeſt, that the afore-mentioned diſtances, and differencies of Kingdoms, and Juriſdictions, are great impediments to all the ſaid ſeveral ſorts of Wealth, as may be ſeen in the following particulars. Firſt in caſe of War with Foreign Nations, *England* commonly beareth the whole Burthen, and Charge, whereby many in *England* are utterly undone.

Secondly, *England* ſometimes Prohibiting the Commodities of *Ireland*, and *Scotland*, as of late it did the *Cattel*, *Fleſh*, and *Fiſh* of *Ireland*; did not only make *Food*, and conſequently *Labour*, dearer in *England*, but alſo hath forced the People of *Ireland*, to fetch thoſe Commodities from *France*, *Holland*, and other places, which before was ſold them from *England*, to the great

great prejudice of both Nations.

Thirdly, It occaſions an unneceſſary Trouble, and Charge, in Collecting of Cuſtoms, upon Commodities paſſing between the ſeveral Nations.

Fourthly, It is a damage to our *Barbadoes*, and other *American* Trades, that the Goods which might paſs thence immediately, to ſeveral Parts of the World, and to be ſold at moderate Rates, muſt firſt come into *England*, and there pay Duties, and afterwards (if at all) paſs into thoſe Countries, whither they might have gone immediatly.

Fifthly, The Iſlands of *Jerſey* and *Gernſey*, are protected at the Charge of *England*, nevertheleſs the Labour, and Induſtry of that People (which is very great) redounds moſt to the profit of the *French*.

Sixthly, In *New-England*, there are vaſt Numbers of able bodied *Engliſhmen*, employed chiefly in Husbandry, and in the meaneſt Part of it, (which is breeding of Cattel) whereas *Ireland* would have contained all thoſe Perſons, and at worſt would have afforded them Lands on better terms, than they have

have them in *America*, if not ſome other better Trade withal, than now they can have.

Seventhly, The Inhabitants of the other Plantations, although they do indeed Plant Commodities, which will not grow ſo well in *England*; yet graſping at more Land, than will ſuffice to produce the ſaid *Exotics* in a ſufficient quantity to ſerve the whole World, they do therein but diſtract, and confound, the effect of their own Indeavours.

Eighthly, There is no doubt that the ſame People, far and wide diſperſed, muſt ſpend more upon their Government, and Protection, than the ſame living compactly, and when they have no occaſion to depend upon the Wind, Weather, and all the Accidents of the Sea.

A ſecond Impediment to the greatneſs of *England*, is the different Underſtanding of ſeveral Material Points, *viz.* Of the King's Prerogative, Privileges of Parliament, the obſcure Differences between Law and Equity; as alſo between Civil and Eccleſiaſtical Juriſdictions;

The different Underſtanding of Prerogative and Privileges of Parliament, Law, and Equity, Civil and Eccleſiaſtical; the Supream Legiſlature of Ireland, *&c.*

ons; Doubts whether the Kingdom of *England*, hath Power over the Kingdom of *Ireland*, beſides the wonderful Paradox, that *Engliſh-men*, lawfully ſent to ſuppreſs Rebellions in *Ireland*, ſhould after having effected the ſame, (be as it were) disfranchiſed, and loſe that Intereſt in the Legiſlative Power, which they had in *England*, and pay Cuſtoms as Foreigners for all they ſpend in *Ireland*, whither they were ſent, for the Honor and Benefit of *England*.

Want of Natural Union for want of mixture and tranſplantation.

The third Impediments is, That *Ireland* being a Conquered Countrey, and containing not the tenth part as many *Iriſh* Natives, as there are *Engliſh* in both Kingdoms, That natural and firm Union is not made, between the two Peoples, by Tranſplantations, and proportionable mixture, ſo as there may be but a tenth part, of the *Iriſh* in *Ireland*, and the ſame proportion in *England*; whereby the neceſſity of maintaining an Army in *Ireland*, at the expence of a quarter of all the Rents of that Kingdom may be taken away.

The unequal inconvenient method of Taxing.

The fourth Impediment is, That Taxes in *England* are not levied upon the Expence, but upon the whole Eſtate;

ſtate; not upon *Lands*, *Stock*, and *Labour*, but chiefly upon Land alone; and that not by an equal, and indifferent Standard, but the caſual predominancy, of *Parties*, and *Factions*: and moreover, that theſe Taxes are not levied with the leaſt Trouble and Charge, but let out to Farmers, who alſo let them from one to another without explicite Knowledge of what they do; but ſo as in concluſion, the poor People pay twice as much as the King receives.

Inequality of Shires, Dioceſſes, Pariſhes, Members of Parliament, &c.

The fifth Impediment is the inequality of *Shires*, *Dioceſes*, *Pariſhes*, *Church-Livings*, and other Precincts, as alſo the Repreſentation of the People in Parliament; all which do hinder the Operations of Authority in the ſame manner, as a Wheel irregularly made, and excentrically hung; neither moves ſo eaſily, nor performs its Work ſo truly, as if the ſame were duly framed and poiſed.

Sixthly, Whether it be an Impediment, that the Power of making War, and raiſing Money be not in the ſame Hand, much may be ſaid; but I leave it to thoſe, who may more properly meddle with Fundamental Laws.

None of these Impediments are Natural, but did arise as the irregularity of Buildings do, by being built, part at one time, and part at another; and by the changing of the state of things, from what they were at the respective times, when the Practices we complain of, were first admitted, and perhaps, are but the warpings of time, from the rectitude of the first Institution.

As these Impediments are contingent, so they are also removeable; for may not the Land of superfluous Territories be sold, and the People with their moveables brought away? May not the *English* in the *American* Plantations (who Plant *Tobacco*, *Sugar*, *&c.*) compute what Land will serve their turn, and then contract their Habitations to that proportion, both for quantity and quality? as for the People of *New-England*, I can but wish they were Transplanted into *Old-England*, or *Ireland* (according to Proposals of their own, made within this Twenty Years) although they were allowed more Liberty of Conscience, than they allow one another.

May not the three Kingdoms be United into one, and equally represented in Parlia-

Parliament? Might not the ſeveral Species of the King's Subjects, be equally mixt in their Habitations? Might not the Pariſhes, and other Precincts be better equalized? Might not Juriſdictions, and pretences of Power, be determined and aſcertained? Might not the *Taxes* be equally applotted, and directly applied to their ultimate uſe? Might not Diſſenters in Religion be indulged, they paying for a competent Force to keep the Publick Peace? I humbly venture to ſay, all theſe things may be done, if it be ſo thought fit by the Sovereign Power, becauſe the like hath often been done already, at ſeveral Places and Times.

CHAP. VI.

That the Power and Wealth of England *hath increaſed this laſt Forty Years.*

Many Territories have been added to England *within about Forty Years, and many improvements made.*

IT is not much to be doubted, but that the Territories under the King's Dominions have increaſed; foraſmuch as *New-England*, *Virginia*, *Barbadoes*, and *Jamaica*, *Tangier*, and *Bumbay*, have ſince that time, been either added to His Majeſty's Territories, or improved from a *Deſart Condition*, to abound with People, Buildings, Shipping, and the Production of many uſeful Commodities. And as for the Land of *England*, *Scotland*, and *Ireland*, as it is not leſs in quantity, than it was Forty Years ſince; ſo it is manifeſt that by reaſon of the Dreyning of *Fens*, watering of dry Grounds, improving of *Foreſts*, and *Commons*, making of *Heathy* and *Barren Grounds*, to bear *Saintfoyne*, and *Clovergraſs*; meliorating, and multiplying ſeveral ſorts of Fruits, and

and Garden-Stuff, making ſome Rivers Navigable, *&c.* I ſay it is manifeſt, that the Land in its preſent Condition, is able to bear more Proviſion, and Commodities, than it was Forty Years ago.

Secondly, Although the People in *England*, *Scotland*, and *Ireland*, which have extraordinarily periſhed by the Plague, and Sword, within this laſt Forty Years, do amount to about Three Hundred Thouſand, above what have died in the ordinary way; yet the ordinary increaſe by Generation of Ten Millions, which doubles in Two Hundred Years, as hath been ſhewn by the Obſervators upon the Bills of Mortality, may in Forty Years (which is a fifth part of the ſame time) have increaſed one fifth part of the whole number, or Two Millions. Where note by the way, that the acceſſion of *Negroes* to the *American* Plantations (being all Men of great Labour and little Expence) is not inconſiderable; beſides, it is hoped that *New-England*, where few or no Women are Barren, and moſt have many Children, and where People live long, and healthfully, hath produced an increaſe

of as many People, as were deſtroyed in the late Tumults in *Ireland*.

The Houſing of London doubled in value.

As for *Houſing*, the Streets of *London* it ſelf ſpeaks it, I conceive it is double in value in that City, to what it was Forty Years ſince; and for *Houſing* in the Countrey, they have increaſed, at *New-Caſtle*, *Yarmouth*, *Norwich*, *Exeter*, *Portſmouth*, *Cowes*, *Dublin*, *Kingſale*, *Londonderry*, and *Coleraine* in *Ireland*, far beyond the proportion of what I can learn have been dilapidated in other places. For in *Ireland* where the ruin was greateſt, the *Houſing* (taking all together) is now more valuable than Forty Years ago, nor is this to be doubted, ſince *Houſing* is now more ſplendid, than in thoſe days, and the number of Dwellers is increaſed, by near one fifth part; as in the laſt Paragraph is ſet forth.

The Shipping very much increaſed with the Reaſons thereof.

As for Shipping, His Majeſty's Navy is now triple, or quadruple, to what it was Forty Years ſince, and before the *Sovereign* was Built; the Shipping Trading into *Newcaſtle*, which are now about Eighty Thouſand Tuns, could not be then above a quarter of that quantity. Firſt, Becauſe the City of *London*, is doubled. 2. Becauſe the uſe of Coals

is

is alſo at leaſt doubled, becauſe they were heretofore ſeldom uſed in Chambers, as now they are, nor were there ſo many Bricks burned with them as of late. nor did the Countrey on both ſides the *Thames*, make uſe of them as now. Beſides there are employed in the *Guinny* and *American Trade*, above Forty Thouſand Tun of Shipping *per Annum*; which Trade in thoſe days was inconſiderable. The quantity of Wines Imported was not near ſo much as now; and to be ſhort, the Cuſtoms upon Imported, and Exported Commodities, did not then yield a third part of the preſent Value; which ſhews that not only *Shipping*, but *Trade* it ſelf hath increaſed, ſomewhat near that proportion.

As to Money, the Intereſt thereof was within this Fifty Years, at 10 *l. per Cent.* Forty Years ago, at 8 *l.* and now at 6 *l.* no thanks to any Laws which have been made to that purpoſe, foraſmuch as thoſe who can give good ſecurity, may now have it at leſs: But the natural fall of Intereſt, is the effect of the increaſe of Money. *Intereſt of Money abated near half.*

Moreover, if *rented Lands*, and *Houſes*, have increaſed; and if *Trade* hath increaſed alſo, it is certain that Money which payeth thoſe *Rents*, and driveth on *Trade*, muſt have increaſed alſo.

Laſtly, I leave it to the Conſideration of all Obſervers, whether the Number, and ſplendor of *Coaches*, *Equipage*, and *Houſhold Furniture*, hath not increaſed, ſince that time; to ſay nothing of the Poſtage of Letters, which have increaſed from One to Twenty, which argues the increaſe of Buſineſs, and Negotiation. I might add that His Majeſty's Revenue is near tripled, and therefore the means to pay, and bear the ſame, have increaſed alſo.

Money & the Publick Revenue increaſed.

CHAP.

CHAP. VII.

That one tenth part of the whole Expence, of the King of England's *Subjects, is ſufficient to maintain Ten Thouſand Foot, Forty Thouſand Horſe, and Forty Thouſand Men at Sea; and defray all other Charges of the Government, both ordinary and extraordinary, if the ſame were regularly taxed and raiſed.*

An Eſtimate of the mediūm of Expence of each Head in England.

TO clear this Point, we are to find out, what is the middle *expence* of *each Head* in the *King's Dominions*, between the higheſt and the loweſt; to which I ſay, it is not probably leſs, than the expence of a Labourer, who earneth about 8 *d.* a day; for the Wages of ſuch a Man is 4 *s. per* Week, without Victuals, or 2 *s.* with it; wherefore the Value of his Victuals is 2 *s. per* Week, or 5 *l.* 4. *s. per Annum:* Now the value of Clothes cannot be leſs than the Wages given to the pooreſt Maid-Servant

Servant in the Countrey, which is 30 *s. per Annum*, nor can the Charge of all other Neceſſaries, be leſs than 6 *s. per Annum* more; wherefore the whole Charge is 7 *l.*

It is not likely that this Diſcourſe will fall into the Hands of any that live at 7 *l. per Annum*, and therefore ſuch will wonder at this ſuppoſition: But if they conſider how much the Number of the Poor, and their Children, is greater than that of the Rich; although the perſonal Expence of ſome Rich Men, ſhould be Twenty times more than that of a Labourer; yet the Expence of the Labourer above-mentioned, may well enough ſtand for the Standard of the Expence of the whole Maſs of Mankind.

Now if the Expence of each Man, one with another, be 7 *l. per Annum*, and if the Number of the King's Subjects, be Ten Millions, then the tenth part of the whole Expence, will be Seven Millions; but about Five Millions, or a very little more, will amount to One Year's Pay for One Hundred Thouſand Foot, Forty Thouſand Horſe, and Forty Thouſand Men at Sea, Winter and Summer; which can rarely be neceſſary. And the ordinary

ordinary Charge of the Government, in times of deep, and ſerene Peace, was not 600000 *l. per Annum.*

Where a People thrive, there the income is greater than the expence, and conſequently, the tenth part of the expence is not a tenth part of the income; now for Men to pay a tenth of their expence, in a time of the greateſt exigency (for ſuch it muſt be when ſo great Forces are requiſite) can be no hardſhip, much leſs a deplorable condition for to bear the tenth part, a Man needs ſpend but a twentieth part leſs, and labour a twentieth part more, or half an hour *per diem* extraordinary, both which within common Experience are very tolerable; there being very few in *England*, who do not eat by a twentieth part more than does them good; and what miſery were it, inſtead of wearing Cloth of 20 *s. per* Yard, to be contented with that of 19 *s.* few Men having skill enough to diſcern the difference.

Memorandum, That all this while I ſuppoſe, that all of theſe Ten Millions of People, are obedient to their Sovereign, and within the reach of his Power; for

for as things are otherwiſe, ſo the Calculation muſt be varied.

CHAP. VIII.

That there are ſpare Hands enough among the King of England's *Subjects, to earn Two Millions* per Annum *more than they now do; and that there are alſo Employments, ready, proper, and ſufficient, for that purpoſe.*

TO prove this Point we muſt enquire, how much all the People could earn, if they were diſpoſed, or neceſſitated to Labour, and had Work whereupon to employ themſelves; and compare that Summ with that of the total Expence above-mentioned; deducting the Rents, and Profits of their Land, and Stock, which properly ſpeaking, ſaveth ſo much Labour. Now the proceed of the ſaid Lands, and Stock in the Countries, is about three parts of Seven, of the whole Expence; ſo as where the Expence is Seventy Millions, the

the Rent of the Land, and the Profit of all the Perſonal Eſtate, Intereſt of money, *&c.* muſt be about Thirty Millions; and conſequently the value of the Labour forty Millions, that is 4 *l. per* Head.

But it is to be noted, That about a quarter of the Maſs of Mankind, are Children, Males, and Females, under ſeven years old, from whom little Labour is to be expected. It is alſo to be noted, That about another tenth part of the whole People, are ſuch as by reaſon of their great *Eſtates, Titles, Dignities, Offices,* and *Profeſſions,* are exempt from that kind of Labour we now ſpeak of; their buſineſs being, or ought to be, to *Govern, Regulate,* and *Direct,* the *Labours,* and *Actions* of *others.* So that of ten Millions, there may be about ſix Millions and an half, which (if need require) might actually Labour: And of theſe ſome might earn 3 *s. per* week, ſome 5 *s.* and ſome 7 *s.* That is all of them might earn 5 *s. per* week at a *Medium* one with another; or at leaſt 10 *l. per annum,* (allowing for ſickneſs, and other accidents;) whereby the whole might earn ſixty five Millions *per annum,* that is twenty five more than the expence.

The

The Author of the State of *England*, ſays that the *Children* of *Norwich*, between ſix and ſixteen years old, do earn 12000 *l. per annum*, more than they ſpend. Now foraſmuch as the People of *Norwich*, are a three hundredth part of the People of *England*, as appears by the Accompts of the Hearth-money; and about a five hundredth part, of all the Kings Subjects throughout the World; it follows that all his Majeſty's Subjects, between ſix and and ſixteen years old, might earn five Millions *per annum* more than they ſpend.

Again, foraſmuch as the number of People, above ſixteen years old, are double the number, of thoſe between ſix and ſixteen; and that each of the Men can earn double to each of the Children; it is plain that if the Men and Children every where did do as they do in *Norwich*, they might earn twenty five Millions *per ann.* more than they ſpend; which eſtimate grounded upon matter of Fact and Experience, agrees with the former.

Although as hath been proved, the People of *England* do thrive, and that it is poſſible they might *Superlucrate* twenty five Millions *per annum*; yet it is manifeſt that they do not, nor Twenty three, which

which is leſs by the Two Millions herein meant; for if they did *Superlucrate* Twenty three Millions, then in about five or ſix years time the whole Stock, and Perſonal Eſtate of the Nation would be doubled, which I wiſh were true, but find no manner of reaſon to believe; wherefore if they can *Superlucrate* Twenty five, but do not actually *Superlucrate* Twenty three, nor Twenty, nor Ten, nor perhaps Five, I have then proved what was propounded; *viz.* That there are ſpare Hands among the Kings Subjects, to earn Two Millions more than they do.

But to ſpeak a little more particularly concerning this matter: It is to be noted that ſince the Fire of *London*, there was earned in four years by Tradeſmen, (relating to Building only) the ſum of four Millions; *viz.* One Million *per annum*, without leſſening any other ſort of Work, Labour, or Manufacture, which was uſually done in any other four years before the ſaid occaſion. But if the Tradeſmen relating to Building only, and ſuch of them only as wrought in and about *London*, could do one Millions worth of Work extraordinary; I think that from thence, and from what hath been ſaid before, all the

the reſt of the ſpare Hands, might very well double the ſame, which is as much as was propounded.

Now if there were ſpare Hands to *Superlucrate* Millions of Millions, they ſignifie nothing unleſs there were Employment for them; and may as well follow their Pleaſures, and Speculations, as Labour to no purpoſe; therefore the more material Point is, to prove that there is Two Millions worth of Work to be done, which at preſent the King's Subjects do neglect.

For the proof of this there needs little more to be done, than to compute 1. How much money is paid, by the King of *England's* Subjects, to Foreigners for Freights of Shipping. 2. How much the *Hollanders* gain by their Fiſhing Trade, practiſed upon our Seas. 3. What the value is of all the Commodities, Imported into, and ſpent in *England*; which might by diligence be produced, and Manufactured here. To make ſhort of this matter, upon peruſal of the moſt Authentick Accompts, relating to theſe ſeveral particulars, I affirm that the ſame amounteth to above five Millions, whereas I propounded but two Millions.

For

For a further Proof whereof Mr. *Samuel Fortry* in his ingenious Discourse of Trade, exhibits the particulars, wherein it appears, that the Goods imported out of *France* only, amount yearly to Two Millions six hundred thousand Pounds. And I affirm, That the *Wine*, *Paper*, *Corke*, *Rozen*, *Capers*, and a few other Commodities, which *England* cannot produce, do not amount to one fifth part of the said sum. From whence it follows, that (if Mr. *Fortry* hath not erred) the Two Millions here mentioned may arise from *France* alone; and consequently five or six Millions, from all the three Heads last above specified.

CHAP. IX.

That there is Money sufficient to drive the Trade of the Nation.

Since his Majesty's happy *Restauration*, it was thought fit to call in, and new Coin the money, which was made in the times of *Usurpation*. Now it was observed by the general content of Cathiers, that the said money (being by frequent Revolutions well mixed with old) was about a seventh part thereof; and that the said money being called in, was about 800000 *l.* and consequently the whole five Millions six hundred thousand Pound. Whereby it is probable that (some allowance being given for hoarded money) the whole Cash of *England* was then about six Millions, which I conceive is sufficient to drive the Trade of *England* not doubting but the rest of his Majesties Dominions have the like means to do the same respectively.

If there be six Millions of Souls in *England*, and that each spendeth 7 *l per annum*, then the whole expence is Forty two Millions, or about Eight hundred thousand

thouſand Pound *per* Week; and conſequently, if every Man did pay his expence weekly, and that the money could Circulate within the compaſs of a Week, then leſs than one Million would anſwer the ends propoſed. But foraſmuch as the Rents of the Lands in *England* (which are paid half yearly) are Eight Millions *per annum*, there muſt be Four Millions to pay them. And foraſmuch as the Rent of the Houſing of *England*, paid quarterly, are worth about four Millions *per ann.* there needs but one Million to pay the ſaid Rents; wherefore ſix Millions being enough to make good the three ſorts of Circulations above-mentioned, I conceive what was propoſed, is competently proved, at leaſt till ſomething better be held forth to the contrary.

CHAP. X.

That the King of England's *Subjects, have* Stock *competent and convenient, to drive the Trade of the whole* Commercial World.

NOW for the further incouragement of Trade, as we have ſhewn that there is money enough in *England* to manage the Affair thereof; ſo we ſhall now offer to conſideration, whether there be not a competent and covenient Stock to drive the Trade of the whole *Commercial World*. To which purpoſe it is to be remembred, That all the Commodities, yearly Exported out of every part of the laſt mentioned World, may be bought for Forty five Millions; and that the Shipping employed in the ſame World, are not worth above fifteen Millions more, and conſequently, that ſixty Millions at moſt, would drive the whole Trade above-mentioned, without any truſt at all, but foraſmuch as the growers of Commodities, do commonly truſt them to ſuch Merchants or Factors, as are worth but ſuch a part of the full value of their Commodities, as may poſſibly be loſt upon the

ſale

ſale of them, whereas Gain is rather to be expected; it follows that leſs than a Stock of ſixty Millions, nay leſs than half of the ſame ſum, is ſufficient to drive the Trade above-mentioned: It being well known that any Tradeſman of good Reputation worth 500*l.* will be truſted with above 1000*l.* worth of Commodities: Wherefore leſs than thirty Millions, will ſuffice for the ſaid purpoſe; of which ſum, the *Coin*, *Shipping*, and *Stock*, already in Trade, do at leaſt make one half.

And it hath been ſhewn, how by the Policy of a *Bank*, any ſum of money may be made equivalent in Trade, unto near double of the ſame; by all which it ſeems, that even at preſent much is not wanting, to perform what is propounded. But ſuppoſe Twenty Millions or more were wanting, it is not improbable, that ſince the generality of Gentlemen, and ſome Noblemen, do put their younger Sons to Merchandize; they will ſee it reaſonable, as they increaſe in the number of Merchants, ſo to increaſe the magnitude of Trade, and conſequently to increaſe Stock; which may effectually be done, by inbanking Twenty Millions worth of Land, not being above a ſixth or ſeventh of the whole Territory of *England*; (that is to ſay)

ſay) by making a *Fund* of ſuch value, to be ſecurity for all *Commodities*, Bought and Sold upon the accompt of that *Univerſal Trade* here mentioned.

And thus it having appeared, that *England* having in it, as much Land, like *Holland* and *Zealand*, as the ſaid two Provinces do themſelves contain, with abundance of other Land, not inconvenient for Trade; and that there are *ſpare Hands* enough, to earn many Millions of money, more than they now do, and that there is alſo Employment to earn ſeveral Millions, (even from the Conſumption of *England* it ſelf) it follows from thence, and from what hath been ſaid in the laſt Paragraph, about inlarging of Stock, both of Money, and Land; that it is not impoſſible, nay a very feaſible matter, for the King of *England's* Subjects, to gain the *Univerſal Trade* of the whole *Commercial World*.

Nor is it unſeaſonable to intimate this matter, foraſmuch as the younger Brothers, of the good Families of *England*, cannot otherwiſe be provided for, ſo as to live according to their Birth and Breeding: For if the Lands of *England* are worth eight Millions *per Annum*, then there be at a *medium* about Ten thouſand Families,

milies, of about 800 *l. per annum*; in each of which, one with another, we may suppose there is a younger Brother, whom less than two or 300 *l. per annum* will not maintain suitable to his Relations: Now I say that neither the Offices at Court, nor Commands in our ordinary Army and Navy, nor Church Preferments, nor the usual Gains by the Profession of the Law, and Physick, nor the Employments under Noblemen, and the like, will all of them put together, furnish livelyhoods of above 800 *l. per ann.* to Three thousand of the said Ten thousand younger Brothers; wherefore it remains that Trade alone must supply the rest. But if the said seven thousand Gentlemen, be applyed to Trade, without increasing of Trade, or if we hope to increase Trade, without increasing of Stock, which for ought appears is only to be done, by imbanking a due proportion of Lands and money, we must necessarily be disappointed. Where note, that selling of Lands to Foreigners for Gold and Silver, would inlarge the Stock of the Kingdom: Whereas doing the same between one another, doth effect nothing. For he that turneth all his Land into money, disposes himself for Trade; and he that

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